University of Lethbridge

Physical Plant Operations & Planning

Carpenter Shop

Health & Safety Program

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

ORGANIZATIONAL COMMITMENT

ORGANIZATIONAL COMMITMENT

RESPONSIBILITIES

The ultimate responsibility for establishing and maintaining the Occupational Health and Safety Program on campus rests with the Board of Governors of The University of Lethbridge. Basic policies, which govern the activities and limitations of the Health and Safety program, are proposed by the President of The University of Lethbridge and issued under the final authority of the Board of Governors.

The primary responsibility for providing and maintaining a healthy and safe campus environment on a day-to-day basis lies at the operational departmental level. Specific responsibilities of all Physical Plant staff are directly proportional to their operational authority and are listed below.

The Physical Plant Department requires that all supervisors and employees adhere to the policies, regulations and procedures set forth in this manual as well as the policies and regulations of The University of Lethbridge and the Alberta *Occupational Health & Safety Regulation and Code.* This manual does not replace the standards set forth by The University of Lethbridge or the Alberta *Occupational Health & Safety Regulation and Code*. Where there are discrepancies the stricter will apply.

Executive Director of Physical Plant:

It is the responsibility of the Executive Director of Physical Plant to maintain a healthy and safe working environment within the jurisdiction, to monitor and exercise control over assigned areas and implement the following designated safety-related responsibilities:

- Providing management the support and leadership necessary for the overall planning, implementation and execution of The University of Lethbridge safety policies within their areas of responsibility.
- Incorporating adequate provisions for safe working practices and conditions in operational policies and procedures and in programs and projects.
- Monitoring and evaluating safety performance within their areas of responsibility and recommending measures to bring about improvement.

Superintendents, Managers & Supervisors

All Superintendents, Managers and Supervisors within Physical Plant are responsible for ensuring that facilities and conditions under their jurisdiction are monitored and maintained in a safe manner at all times. Special emphasis should be given to ensuring that adequate training is provided prior to tasks being assigned. It is expected that preference will be given to following established safe work procedures over expedient hazardous shortcuts in all operations. Further responsibilities include:

- Ensuring compliance with the Alberta Occupational Health and Safety Regulations and Code;
- Planning and executing all activities in a manner that promotes compliance with The University of Lethbridge safety policies.
- Ensuring that individuals in their areas of assignment have been given adequate direction, training and instruction in the safe performance of their work, and that it is performed without undue risk.
- Ensuring that employees are provided with all tools and equipment (including Personal Protective Equipment (PPE) complete with instructions on its proper use), necessary to

carry out their duties without jeopardizing their health and safety or the health and safety of others.

- Ensuring that work areas are inspected at regular intervals to prevent the development of unsafe conditions and practices.
- Authorizing the action necessary to correct substandard conditions or procedures.
- Ensuring all incidents and near misses are reported and investigated, and action taken to prevent a recurrence.
- Making every effort to ensure that medical treatment is received for all injuries.

Employees

All Physical Plant employees are subject to the health and safety requirements established in this manual, to departmental operational procedures and to all other applicable regulatory requirements. Responsibilities of employees include:

- Observing all safety rules and procedures established by the regulatory authorities and The University of Lethbridge.
- Consulting with their Supervisor on the safe way to perform a task which is considered hazardous or is known to be hazardous, prior to beginning the task.
- Performing a Hazard Assessment before commencement of any task, involving the physical environment, to ensure all control measures are in place to safely execute the task without risk to themselves, other employees or the public.
- Wearing Personal Protective Equipment when required to ensure health and safety are not jeopardized.
- Promptly reporting hazardous or unsafe equipment, facilities, conditions, procedures or behavior to a supervisor, making suggestions for their corrective action and taking corrective action where authorized.
- Immediately reporting to a supervisor all work related incidents or injuries and obtaining first-aid treatment without delay.
- Reporting promptly to a supervisor any treatment by a physician following a work related injury.

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HEALTH & SAFETY PROGRAM

HAZARD IDENTIFICATION

HAZARD IDENTIFICATION

A consistent hazard evaluation process was used throughout the Physical Plant departments for hazard identification of the various job tasks performed, and equipment used. Workshops were conducted to train employees and managers on how to evaluate the hazards associated with their jobs.

***The employees performing the tasks, and operating the equipment conducted all evaluations*.**

HAZARDS

For each job task and piece of equipment evaluated the following OH&S industry standard hazards were taken into consideration:

1. **Falling Objects**
2. **Chemical Exposure**
3. **Exposure to Heat / Cold**
4. **Dust / Vapours**
5. **Light Radiation**
6. **Electrical**
7. **Noise**
8. **Eye Injury**
9. **Repetitive Strain / Motion**
10. **Lifting**
11. **Slips / Falls**
12. **Ice / Docks & Roads**
13. **Rotating Equipment**
14. **Pinch Points**
15. **Cuts**
16. **Eye Strain**
17. **Fire**
18. **Asbestos**
19. **Radioactive Exposure**
20. **Working Alone**
21. **Mold**

The above list shall be used as a guide in reference to hazards identified throughout this manual.

HAZARD ASSESSMENT

The fundamental principle of a Health and Safety Program is to reduce injury and disease to employees. One of the most important aspects of a health and safety program is hazard assessment. Hazard identification is crucial in the workplace.

Conducting a Hazard Assessment

1. The job tasks are listed.

2. Compile a master list of the jobs.

3. Determine the hazards associated with the jobs. Each hazard is determined as if there are not controls in place. For example, chemical splash without safety goggles.

4. Rank the **exposure**
   1 = unlikely: a person is exposed to the hazard 1x a year or less
   2 = occasionally: a person is exposed to the hazard 1x month or less
   3 = often: a person is exposed to the hazard more than 2x but less than 4x per month
   4 = frequently: a person is exposed to the hazard 1x or 2x per week
   5 = continuous: a person is exposed to the hazard 1x or more per day

5. What is the **probability of occurrence**
   1 = unlikely to occur
   2 = some chance
   3 = could occur
   4 = good chance
   5 = will occur if not attended to

6. What are the **consequences**
   1 = insignificant: a person receives a very minor injury, no damage to property
   2 = first aid or minor property damage: a person administers first aid to self
   3 = injury results in lost time, seeking medical help or significant property damage
   4 = injury results in permanent disability, serious health effects or property damage
   5 = injury results in a fatality, or there is major property damage

7. Add the numbers to reach a total risk rating. A risk rating of:
   Serious (11 – 15) means the hazard must be attended to immediately, prior to the commencement of the job. Controls **must** be put into place. A safe job procedure **must** be in place prior to the commencement of the job.
   Moderate (6 – 10) means the hazard requires attention. Controls **should** be put into place. A safe work procedure **should** be in place prior to the commencement of the job, but could be attended to once the job has commenced. Employees **must** be aware of the hazard. The safe work procedure **must** be in place prior to the completion of the job.
   Low (3 – 5) means the hazard requires monitoring. Controls are recommended. A safe work procedure is recommended.

HAZARD ELIMINATION AND CONTROL

If an existing or potential hazard to workers is identified during a hazard assessment, measures must be taken to:

- eliminate the hazard, or
- If elimination is not reasonably practicable, control the hazard

If reasonably practicable, the hazard must be eliminated or controlled through the use of engineering controls.

If a hazard cannot be eliminated or controlled using engineering controls, administrative controls must be used to control the hazard to a level as low as reasonably achievable.

If a hazard cannot be eliminated or controlled using engineering or administrative controls, then appropriate personal protective equipment must be used.

If a hazard cannot be eliminated or controlled using any one of the above controls, then a combination of these should be used if this would provide a greater level of worker safety.

If emergency action is required to control or eliminate a hazard that is dangerous to the safety or health of workers:

- only those workers competent in correcting the condition, and the minimum number necessary to correct the condition, may be exposed to the hazard, and
- every reasonable effort must be made to control the hazard while the condition is being corrected.

The following are some examples of controls.

Engineering controls

• Design of a workplace
• Automation/material handling devices
• Machine guard, interlocks, lockouts, warning devices
• Isolation/enclosure
• Limitation (safety valves)
• Ventilation (general dilution/local exhaust)
• Storage
• Air monitoring devices
• Communication devices

Administrative controls

• Substitution of a less toxic product
• Purchasing criteria (tools, equipment, chairs, etc)
• Policies and procedures
• Training
• Organizing and planning work
• Rotation of workers
• Safety plan/procedure

Personal Protective Equipment (PPE)

• Hard hat
• Goggles
• Hearing
• Safety boots
• T-shirts with 4 inch sleeves
• Respiratory protective equipment
• Fall protection

JOB TASKS ANALYZED

Safe Work Procedures were written up for jobs tasks evaluated as having High or Extreme Hazards associated with them.

The following job tasks for the Carpenter Shop were found to have some high risk hazards associated with them through the Risk Analysis process as mentioned.

Conducted By: Ed Enns
Darrel Crawford
Jayne Yates

Date: February / April 2001

Adhesives / Finishes Application

- #4 Dust / Vapours (45)
- #9 Repetitive Strain / Motion (30)

Bulletin Board Installation - Tack Board / Cabinet with Glass Doors

- #7 Noise (36)

Cabinets / Bookcases / Collators Installation – Overhead / Floor Mount

- #7 Noise (36)

Cutting of Glass / Mirrors

- #15 Cuts (36)

Cutting of Wood / Metal / Plastic

- #4 Dust / Vapours (50)
- #7 Noise (125)
- #8 Eye Injury (125)
- #9 Repetitive Strain / Motion (100)
- #10 Lifting (100)
- #13 Rotating Equipment (125)
- #15 Cuts (125)

Door Installation

- #1 Falling Objects (36)
- #8 Eye Injury (36)
- #10 Lifting (64)

White Board / Chalk Board Installation – Sliding / Stationary

- #7 Noise (36)
- #10 Lifting (36)

Window Installation

- #1 Falling Objects (36)
- #7 Noise (36)
- #8 Eye Injury (36)
- #10 Lifting (64)
- #15 Cuts (36)

Shop Equipment / Tools:

Grinder

- #7 Noise (64)

- #8 Eye Injury (36)

Hand Held Power Tools

- #7 Noise (80)
- #8 Eye Injury (80)
- #13 Rotating Equipment (60)
- #15 Cuts (60)

Jointer

- #7 Noise (64)

Mitre Saw

- #7 Noise (64)
- #8 Eye Injury (64)
- #13 Rotating Equipment (64)
- #15 Cuts (64)

Planer - Stationary

- #7 Noise (64)

Pneumatic Tools / Compressed Air

- #4 Dust / Vapours (64)
- #8 Eye Injury (80)

Power Washer

- #6 Electrical (40)
- #17 Fire (50)

Sanders

- #4 Dust / Vapours (64)

Shaper / Router

- #7 Noise (64)

Skill Saw (Hand Held Power Circular Saw)

- #4 Dust / Vapours (64)
- #7 Noise (64)
- #8 Eye Injury (48)

Table Saw

- #4 Dust / Vapours (64)
- #7 Noise (64)
- #8 Eye Injury (64)
- #13 Rotating Equipment (64)
- #15 Cuts (64)

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

HAZARD CONTROL

SAFE WORK PROCEDURES OVERVIEW

Throughout Physical Plant assessments were conducted on the various existing job tasks and equipment operated to determine the hazards employees may be exposed to. The assessment system used can be found in the previous section of this manual.

Safe Work Procedures were written for specific tasks having high or extreme hazards associated with them. Throughout the Safe Work Procedures, reference is made to various Safe Work Practices as found in Appendix 'A' of these manuals. The Safe Work Procedures vary from the Practices, in that the Procedures are a step by step outline on how to carry out a specific task, whereas the Practices are general safety measures / precautions for tools, equipment, or general work practices which can be applied to a number of Safe Work Procedures.

The Safe Work Procedures were designed to ensure that any information pertaining to the task could be found on the form prior to commencing work. Any hazards associated with the task, along with control measures for these hazards, specific tools or equipment required for the job, as well as references to supplementary material are all listed on the form.

A copy of the Safe Work Procedures Template can be found in this section. This form and the previously mentioned Hazard Analysis System are used whenever new responsibilities or equipment are added to a department.

SAFE WORK PROCEDURE TEMPLATE

GENERAL / BRIEF DESCRIPTION OF TASK:

FREQUENCY OF TASK PERFORMED:

HAZARDS IDENTIFIED:

P.P.E. REQUIRED:

SPECIAL TOOLS REQUIRED (if any):

SAFE WORK PROCEDURE:

GLASS OR MIRROR CUTTING

GENERAL / BRIEF DESCRIPTION OF TASK:

- Cutting of glass or mirror to fit.

FREQUENCY OF TASK PERFORMED:

- On demand.

HAZARDS IDENTIFIED:

#15 – Cuts

P.P.E. REQUIRED:

- Gloves (optional)
- Safety Glasses

SPECIAL TOOLS REQUIRED (if any):

Glass Cutter
Straight Edge

SAFE WORK PROCEDURE:

- Visually inspect worksite for any possible hazards.
- Most glass or mirror used on campus, are precut to size. On occasion glass or mirror gets cut in the shop.
- Always wear safety glasses when cutting glass / mirror.
- Caution is to be used when carrying larger pieces of glass / mirror. Gloves may be worn.
- Measure out size to be cut.
- Using a straight edge as a guide score glass / mirror with glass cutter.
- Line up score line on glass / mirror to edge of table or counter and lightly tap glass down onto table or counter to break along line.
- For smaller pieces, tap glass from underside to break along scored line.
- Sand down raw edge using medium-grit sandpaper to prevent splinters or cuts.

WOOD, METAL, PLASTIC CUTTING

GENERAL / BRIEF DESCRIPTION OF TASK:

- Cutting of wood, metal, or plastic for various construction projects as per work order or blueprint patterns.

FREQUENCY OF TASK PERFORMED:

- Daily as per work orders.

HAZARDS IDENTIFIED:

#4 – Dust / Vapours

P.P.E. REQUIRED:

- Varying with tools used
- Safety Glasses

SPECIAL TOOLS REQUIRED (if any):

Band Saw
Circular Saw
Table Saw
Jig Saw

SAFE WORK PROCEDURE:

- Visually inspect worksite for any possible hazards.
- Ensure all guards are in place and no loose clothing near equipment or power tools.
- All personal protective equipment corresponding to the tool used must be worn.
- Refer to Safe Work Practice for "**Use of Power Tools**" as found in Appendix 'A'.
- Refer to Safe Work Practice for "**Use of Non-Powered Hand Tools**" as found in Appendix ' A'.
- Refer to Safe Work Practice for "**Electrical Safety**" as found in Appendix 'A'.
- Refer to Safe Work Practice for "**Use of Electrical Extension Cords**" as found in Appendix 'A'.
- Refer to Safe Work Practice corresponding to specific carpenter shop equipment.
- Cut pieces according to work order or blueprint patterns.
- If piece is too large to hold and cut, obtain assistance.
- Refer to Safe Work Practice for "**Proper Lifting Techniques**" as found in Appendix 'A'.

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

ORIENTATION & TRAINING

Orientation & Training – Building Maintenance

Appearance and Dress

- While performing outdoor job related duties, University of Lethbridge employees and contractors are to adhere to the protective clothing policy where no muscle shirts, tank tops, or mesh shirts are to be worn. Sleeves must measure a minimum of 4" in length.
- Refer to "Info Sheet" for Sun Protection located in the Safety Manual.

Hours of Operation

- Explain the hours that employees are expected to be at work.
- 2 – 15 minute periods of rest (morning and afternoon) and 1 – 30 minute lunch break.

Lateness / Absenteeism

- High priority is placed on your being at work consistently and on time. However, if for some valid reason you will be late or absent, it is your responsibility to inform your Supervisor.
- Call 329-2602 (Service Centre) at the beginning of your shift.

Illness

- If you are absent from work for more than 3 consecutive days, you will require a doctor's certificate in order to return.

Department Meetings

- Monthly safety meetings in conjunction with Grounds Department.
- Monday morning Building Maintenance meetings – SB2 08:00.
- Attendance at both is mandatory when scheduled to work.

Keys

- Keys are issued to employees for access of buildings corresponding with their jobs.
- All keys are to be returned upon termination of employment.
- Refer to University of Lethbridge Key Policy

Security of Buildings

- Under no circumstances should an employee unlock a door upon request. Explain that under University policy you are not authorized. Refer the individual to Security.

Pagers

- To operate paging system:
  - Dial 5198
  - Taped voice will say “enter pager number”
  - Dial appropriate pager number (these numbers are taped beside the phone in the hallway of Service Building #1)
  - When asked to, enter the number from where you are calling. On campus numbers just enter the last 4 digits.
  - If the matter is an emergency enter “911” before entering the number where you are to be called back at.
  - When paging, never make a call from a phone that is on “call forward”

Campus Tour

- The new employee will be taken on a tour of the campus. Points of general interest will be addressed, making reference to the various buildings on campus.

  The following points of specific interest to Building Maintenance will be addressed:

  Boneyard
  - R-130 Storage

  Service Buildings
  - Carpenter Shop
  - Paint & Sign Shop
  - Locksmith Shop
  - Stores
  - Garage

  Campus Buildings
  - Storage Areas relevant to the area worker is assigned to.

Bus Service to the University

- Bus drop off / pick up areas are as follows:
  - UH level 6, North door
  - SU Level 2, South door
  - North entrance to the University Campus (Intersection of University Drive and Valley Road)
  - Along Valley Road.
  - Refer to campus map for locations.

Parking

- Parking is available in the West, Far West, Exploration Place, and Northwest lots upon purchase of a U of L Parking Permit (Plug or Non-Plug). Permanent Full Time and Permanent Part Time Employees are eligible for payroll deduction of parking permits.
- Vehicles must be parked in the applicable areas. The East, North, and South lots are for special permit parking. Applications for parking in these lots can be made at the Security Office.
- Temporary permits are available at Security (LINC), Service Centre (SB #2), and roadside dispensers at each campus entrance.

Food Services

- UH – Cafeteria, Fresh Express
- SUB – Food Court
- LINC – The Station

Security

- Office located in L911. Local: 2603
- Emergency phone 2345
- Lost & Found office located in L911. Local: 2549

Introduction to Employees

- Introduction to co-workers and welcoming to take place during coffee break or lunch time.

Time Sheets

- Time sheets are filled out to track the daily activities of each employee. These are to be completed on-line and submitted at the end of the month. The Superintendent of Buildings will then verify and authorize the entries through the on-line system at the end of each month.

Introduction to Safety Manual / Program

- Location of Manual and how to reference the contents.
- Review of PPE policy, and issuance of PPE.
- Review of Safe Work Procedures / Practices.
- Review Emergency Response Procedures.

MSDS Binder

- Show where to find the MSDS binders located in the assigned areas of work.

Work Alone Policy

- Refer to department Work Alone Policy ensuring that the employee understands the policy and the importance of the compliance.
- Review Building Maintenance check in procedures

EMPLOYEE ORIENTATION

This is to recognize that the employee listed below has completed the Orientation Process for Building Maintenance. The employee is aware of Department and University Policies and has been provided with the necessary information to proceed with the Job Training Program.

_____	_____
Supervisor	Date
_____	_____
Employee	Date

CARPENTER SHOP – TRAINING MATRIX

Developed by: Ed Enns
Darrel Crawford
Jayne Yates

Date: September 2001

Employee Name: _____

Employment Start Date: _____ Orientation Date: _____

Task	**Training Date**	**Proficiency Date**	**Employee**	**Supervisor**
PPE				
Proper Use & Care:				
Safety Glasses				
Hearing Protection				
Safety Boots				
Respiratory Protection				
MSDS				
Product Labels				
Safety Manual				
Safe Work Procedures				
Hand Held Non-Power Tools				
Identification				
Use / Operation				
Care / Cleanup				
Maintenance				
Sharpening				
General Safety				

Task	Training Date	Proficiency Date	Employee	Supervisor
Hand Held Power Tools				
PPE Required				
General Safe Practices				
Individual Tool Operation				
Select / Change Blades & Bits				
Maintenance				
Cleanup				
Workshop Awareness				
General Housekeeping				
Guards Properly in Place				
Condition of Electrical Cords				
Condition of Blades				
Condition of Belts				
Proper Lubrication of Equipment				
Burning or Hot Smell to Equipment				
Unusual Noise Pitches				
Laboring of Equipment				

Task	Training Date	Proficiency Date	Employee	Supervisor
Carpenter Shop				
Equipment Identification				
Drill Press				
PPE Required				
General Safe Practices				
Operation				
Select / Change Bits				
Operating Mortising Bit				
Speed Settings				
Maintenance				
Cleanup / Care				
Bandsaw				
PPE Required				
General Safe Practices				
Operation				
Hook up of Exhaust				
Select / Change Bits				
Adjustments:				
Table				
Guides				
Bearing				
Belt Tension				
Maintenance				
Cleanup				

Task	Training Date	Proficiency Date	Employee	Supervisor
Sliding Compound Mitre Saw				
PPE Required				
General Safe Practices				
Operation				
Select / Changing Blades				

Adjustments:				
Angle of Cut				
Bevel of Cut				
Depth of Cut				
Empty / Clean Dust Bag				
Maintenance / Lubrication				
Cleanup				
Shaper				
PPE Required				
General Safe Practices				
Operation				
Select / Changing Bits				
Changing Inserts				
Hook up of Exhaust				
Adjustments:				
Fence – Opening & Depth				
Height of Spindle				
Speed & Direction of Feed				
General Maintenance				
Cleanup				

Task	Training Date	Proficiency Date	Employee	Supervisor
Grinder				
PPE Required				
General Safe Practices				
Operation				
Grinding (Grinding Wheel)				
Cleaning (Wire Brush)				
Dress Grinding Wheel				
Changing Wheel / Brush				
Adjustments:				
Angle of Guide				
Eye Shield				
Maintenance				
Cleanup				
Jointer				
PPE Required				
General Safe Practices				
Operation				
Select / Change Bits				
Hook up of Exhaust				
Adjustments:				
Table Height				
Fence				
Height / Depth of Knives in Bit				
Maintenance				
Cleanup				
Task	**Training Date**	**Proficiency Date**	**Employee**	**Supervisor**
Planer				
PPE Required				
General Safe Practices				
Operation				
Hook up of Exhaust				
Adjustments:				

Rollers				
Depth / Height of Knives on Rollers				
Table Height				
Speed				
Lubrication of Table				
Sharpening Blades				
Maintenance				
Cleanup				
Table Saw				
PPE Required				
General Safe Practices				
Operation				
Hook up of Exhaust				
Stock Support				
Select / Change Blades				
Lubrication of Table				
Adjustments:				
Angle of Blade				
Height of Blade				
Fence				
Maintenance				
Cleanup				
Task	**Training Date**	**Proficiency Date**	**Employee**	**Supervisor**
Stationary Sander				
PPE Required				
General Safe Practices				
Operation				
Select / Change Belts				
Select / Change Disks				
Hook up of Exhaust				
Adjustments:				
Belt Position				
Horizontal / Vertical Setting of Belt				
Maintenance				
Cleanup				

Compressed Air System				
PPE Required				
General Safe Practices				
Operation				
Reading of Pressure Gauge				
Valve Control				
Hose Inspection				
Coupler Inspection				
Operation of:				
Air Sander				
Air Nailer				
Air Stapler				
Air Wrench				
Maintenance				
Cleanup				
Task	**Training Date**	**Proficiency Date**	**Employee**	**Supervisor**
Dust Collection System				
Emptying Filter Bag (Inside)				
Emptying Dust Collection Bin (Outside)				
Micro Dust Filter				
Cleaning Filter				
Application of Materials				
Wood Laminate				
Plastic Laminate				
Iron On Laminate				
Birch Edging				
Plastic Edging				
Materials				
Selection of Material Type				
Storage Conditions/Methods				

Selection of Blades – Cutting				
Edging Techniques:				
Wood				
Metal				
Plastic				
Glass				
Blue Prints				
Read / Interpretation				
Transfer of W.O. Info to Blue Print format				
Task	**Training Date**	**Proficiency Date**	**Employee**	**Supervisor**
Doors				
Finishing / Preparation				
Hanging / Installing				
Furniture				
Furniture Construction				
Hardware Installation				
Anchoring of Floor Mount				
Hanging of Wall Mount				

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

FORMAL INSPECTIONS

INFORMAL INSPECTIONS

Currently within the Physical Plant Departments an effective ongoing informal inspection program is carried out on a daily basis by all employees.

All Physical Plant employees are responsible for reporting any visible deficiencies that they come across while performing their regular assigned duties.

Deficiencies that are the responsibility of Building Maintenance, Caretaking, & Grounds are reported to the Administrative Support in the Physical Plant Service Centre located in Service Building #2. Deficiencies that are the responsibility of Plant Utilities are reported to the Administrative Support in Plant Utilities located in University Hall. Once a deficiency is reported, a work order is then generated and assigned to the appropriate group for correction.

A work order request form is accessible on the Physical Plant Operations & Planning website under the Administration directory of the University of Lethbridge home page. This form allows all members of the University of Lethbridge to report deficiencies in their respective areas. Once the form is filled out and submitted, it can be retrieved through the request browser of the Computer Management Maintenance System. A work order is generated from the request and assigned to the appropriate department for attention.

All work orders are tracked in a data base system, which is accessible to all Physical Plant employees. When an employee has corrected the deficiency, the work order is then returned to the support staff in their respective areas to be closed out. The technician's comments are added to the work order in the system to track the history of that area / item.

FORMAL INSPECTIONS

Within Physical Plant, the employees in each of the departments carry out an effective formal inspection program on a monthly basis. This system is in the form of a preventative maintenance program.

Each month a series of Preventative Maintenance (PM) work orders are issued for various equipment, systems and areas of the University.

If any deficiencies are found in the areas examined, the respective administrative staff is notified and a work order is then generated for the appropriate employee / department to correct. This is designated as a PMR (Preventative Maintenance Repair). Any deficiencies found that require immediate corrective action due to imminent danger to employees / public are corrected at the time of inspection and the information pertaining to the work is recorded on the form.

OUT-OF-SERVICE REQUEST

ITEM DESCRIPTION: _____ SERIAL #: _____

LOCATION: _____

EMPLOYEE: _____ DEPARTMENT: _____

EXISTING PROBLEM(S): _____
_____
_____

SIGNATURE: _____ DATE SUBMITTED: _____

SUBMITTED TO: _____ DEPARTMENT: _____

INSPECTED BY: _____ DATE: _____

IMMEDIATE ACTION: _____Lockout / Tagout _____ Remove

CORRECTIVE ACTION: _____Repair _____ Replace

WO ISSUED: _____Yes _____ No WO #: _____

REPAIRED BY: _____ DEPARTMENT: _____

DATE: _____

COMMENTS: _____
_____
_____
_____
_____
_____
_____
_____

REVIEWED BY: _____ DATE: _____

BACK IN SERVICE DATE: _____

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

EMERGENCY RESPONSE PLANNING

University of Lethbridge

Interoffice Memorandum

Date: August 29, 2001

To: APO Managers

From: B. Sullivan

Re: **Procedures for After Hour Occurrences**

From time to time a situation may arise that requires the notification and/or call out of management and/or staff of the Physical Plant Department.

Generally, the protocol for a routine after-hours incident would be for Security to call the manager of the affected department(s). From time to time however, there may be situations, which require notification of other senior Physical Plant staff or senior university administration.

Security Services usually receives the initial information concerning an incident. Routine incidents will be communicated via the immediate supervisor and up through the normal channels.

Significant incidents however, must be communicated to the Office of the President/Vice Presidents via telephone or personal contact. The actual notification will be done by Superintendent of Security Services, Executive Director of Physical Plant, or the Associate Director of Physical Plant, or in their absence, a senior Physical Plant manager. When determining whether or not the incident is "significant", the guiding principle is: **it is better to inform than not to inform**.

It is important that the senior administration of the University are apprised of major incidents. Significant incidents are those which:

- Seriously affect the safety of persons on campus
- Affect the integrity and reputation of the University
- Have the potential to attract the attention of the media

All media contact concerning any incident will be via the Communications Office, unless otherwise directed by the President or his designate.

The attached document outlines the process for notification in the event that the Superintendent of Security, Associate Director and Director of Physical Plant are not available.

Physical Plant managers have the discretion to call upon other department staff to deal with emergencies if they are unable to get a hold of the manager involved or the Executive Director or Associate Director of Physical Plant.

The attached back up document also provides phone numbers of senior department staff that can be called upon in an emergency basis, to deal with situations that affect health and safety of campus users.

Brian Sullivan
Brian Sullivan
Associate Director
Physical Plant & Operations

BS:sh

Attachment: Emergency Response Callout List
Emergency Contact Numbers

cc. D. Parker
N. Walker

Date: May 9, 2003
Revised: November 19, 2003

SPILL RESPONSE For Bio-Hazards

Blood borne Pathogens
And
Other Potentially Hazardous Human Materials

Definitions:

- BLOODBORNE PATHOGENS – pathogenic microorganisms that are present in human blood and cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV). Other examples include microorganisms that cause hepatitis C, i.e. Malaria.
- Other potentially Hazardous Human Materials – Human body fluids such as urine, vomit, saliva, semen and vaginal secretions.

HEPATITIS "B" VACCINATION IS MANDITORY FOR ALL CARETAKING, SECURITY AND UTILITIES STAFF EMPLOYED BY THE UNIVERSITY OF LETHBRIDGE.
(NOTE: Building Maintenance and Grounds Staff do not require Hepatitis "B" vaccinations)

Part of the job requirements of a Caretaker employed by the University when needed is to clean-up a blood spill or other human materials these are unknown hazards and must be treated as such. Grounds, Building Maintenance and Utilities staff and Security Officers may come in contact with these unknown hazards and must treat them as such.

Rules to follow:

- Always wear personal protective equipment in exposure situations.
- Remove PPE that is torn or punctured, or has lost its ability to function as a barrier to blood borne pathogens.
- Replace PPE that is torn or punctured.
- Remove PPE before leaving the work area.

Inspection of the job area is required prior to the commencement of the work to be executed.

- Check the area for blood borne pathogens and other potentially hazardous materials
- If this is the case, notify work control during normal work hours to arrange for Caretaking to clean up. Grounds staff will cleanup any Hazardous Materials found on campus outside of buildings.
- If cleanup is required outside normal work hours, contact your supervisor for guiding and assessment of the situation.
- Before you start the job, ensure you wear you PPE ie. Gloves, goggles, aprons and face masks should be worn when cleaning the sewage lift stations on campus with fall restraint when working over open pit areas.

Clean-up Procedures for Blood borne Pathogens and Other Potentially Hazardous Human Materials:

- Inspect the area prior to commencement of clean-up.
- Ensure you wear P.P.E. 1- Gloves (disposable latex or vinyl)
  2- Goggles
  3- Apron (Optional)
- Ensure you have appropriate cleaning materials on hand.
  1-Disinfectant solution (Bleach 1 in 10 dilution)
  2-Absorbent cloths i.e. paper towel or disposable cloths
  3-Garbage bags.
- Carefully apply bleach solution around the edges of the spill working to the center Allow a twenty-minute contact time. Using paper towels or absorbent cloths, wipe-up spill working from the edges of the spill to the center.
- Clean the spill area again with fresh bleach solution place all materials used in double garbage bags for disposal, including disposable gloves used in the clean up.
- Immediately after spill is cleaned up you must wash your hands.
- Disposal of materials used will be at the direction of your foremen or manager.

OTHER POTENTIAL BIO-HAZARD MATERIALS

SHARPS

Far too frequently Physical Plant workers are punctured or cut by improperly disposed of needles and broken glass. This, of course, exposes them to whatever infectious material may have been on the glass or needle. For this reason, it is especially important to handle and dispose of all sharps carefully in order to protect yourself as well as others.

Rules to follow:

- Look before you reach to empty garbage containers or where your vision maybe impaired i.e. under furniture or behind fixtures.
- Ensure you wear PPE (vinyl gloves).
- Check your gloves for punctures or tears. Replace if damaged.
- Remove PPE before leaving the work area.

Clean-up Procedures for SHARPS:

- If you suspect an object to be bio-hazardous (needles etc.) contact your immediate supervisor before attempting to pick it up.
- Ensure you wear PPE 1- Gloves (disposable vinyl)
  2- Goggles
- Inspect the container you are empting (do not reach inside container).
- Before picking up any object ensure you are able to identify it is not a hazard.
- Ensure you have appropriate disposal container on hand for (sharps) objects. i.e. needles. (Your supervisor will supply appropriate disposal container.)

PROCEDURE FOR CUTS OR STAB WOUNDS FROM NEEEDLES

- Report the incident to your supervisor immediately.
- Save the needle to give to medical personnel.
- You must go to your doctor or emergency for treatment.
- You will be required to fill out an accident incident report form.

YOU MUST KNOW AND UNDERSTAND THE FOLLOWING

- Ensure you know Safe Work Procedure for clean up of Blood borne Pathogens or other potentially Hazardous Human Materials.
- All Appropriate PPE must be worn.
- Remember to use universal precautions and treat all blood or potentially infectious body fluids as if they were contaminated. Avoid contact whenever possible, and whenever it's not wear personal protective equipment.

SPILL RESPONSE

Developed by: Bill Hudgins – Caretaking
Bill Platt – Grounds
John Federkeil – Utilities
Jayne Yates – Physical Plant

Date: September 2001

Throughout Physical Plant various chemicals are used for cleaning, and operational purposes, and the types of chemicals used vary from department to department.

Each department within Physical Plant is responsible for ensuring that the MSDS Sheets provided by the supplier for all of the chemicals used within their own department, are readily available to all of their employees. All employees must have WHMIS training.

Spills Within Physical Plant

Known Substance

- If the substance spilled is known, immediately obtain the MSDS.

- If the known substance is deemed to be **Non-Hazardous**, and conditions surrounding the spill do not pose any danger, follow the cleanup and disposal procedures as outlined on the MSDS.

- If the known substance is deemed to be **Hazardous**, or conditions surrounding the spill are hazardous (ie. can it become airborne; is there a source of spark nearby etc.) **immediately contact Security at local 2345.**

- The following information must be relayed to Security:
  - Your name.
  - There is a spill.
  - Location of the spill.
  - Location of spill kit.
  - Wait outside the location until Security arrives and do not let anyone else enter the area.

Unknown Substance

- If a spill found is of an unknown substance **immediately contact Security at local 2345**.

- The following information must be relayed to Security:
  - Your name.
  - There is a spill.
  - Location of the spill.
  - Location of spill kit.
  - Wait outside the location until Security arrives and do not let anyone else enter the area.

Identifiable Area

- If a spill is found in an identifiable area (ie. Janitor Room, Grounds Shed) immediately contact the head of that department to attend the location of the spill. The department representative is then responsible for determining if the substance is known or unknown and to follow the necessary procedures.

Spill Kits

- It is the responsibility of each employee to know the location of the spill kits in their areas (if applicable).

Chemical Spills Report

- The employee finding the spill must complete the online Accident / Incident form located on the O.H.& S. website under Administration on the U of L home page.
- Once O.H.& S. receives the completed form and / or a phone call, if deemed necessary by O.H.& S., an investigation will commence.

GENERAL RESPONSIBILITIES OF FIRE WARDENS DURING AN EMERGENCY EVACUATION

a) Responsible for the conduct of an orderly evacuation of their area(s).

b) Responsible for checking the exit stairwells to see that they are clear for evacuation, and choose an alternate route should egress be blocked by fire or smoke.

c) Responsible for ensuring that no one from the area is allowed to re-enter the building until the fire department or building fire warden has given permission to do so.

d) Responsible for communication with the building fire warden or delegate on the status of their area(s) and the disposition of any handicapped persons, or others who might need assistance.

FIRE PREVENTION DUTIES OF FIRE WARDENS

FIRE WARDENS WILL CHECK THEIR AREA(S) FOR:

a) Accumulation of combustible material, rubbish, or flammable liquids in excess of quantities allowed.

b) Dangerous ignition sources, i.e. worn extension cords, oily rags, overheating equipment.

c) Exit lights in good working order and adequate lighting in public corridors and stairwells.

d) Fire and exit doors and their self closing hardware in good operating condition (Doors should not be wedged open under any circumstances).

e) Exit routes unobstructed.

f) Fire hose and portable extinguishers not obstructed, in good working order and ready to use.

ALL FIRE HAZARDS THAT ARE DISCOVERED MUST BE REPORTED TO THE BUILDING FIRE WARDEN OR DELEGATE IMMEDIATELY.

IN CASE OF FIRE – R.E.A.C.T.

REMOVE THOSE IN IMMEDIATE DANGER

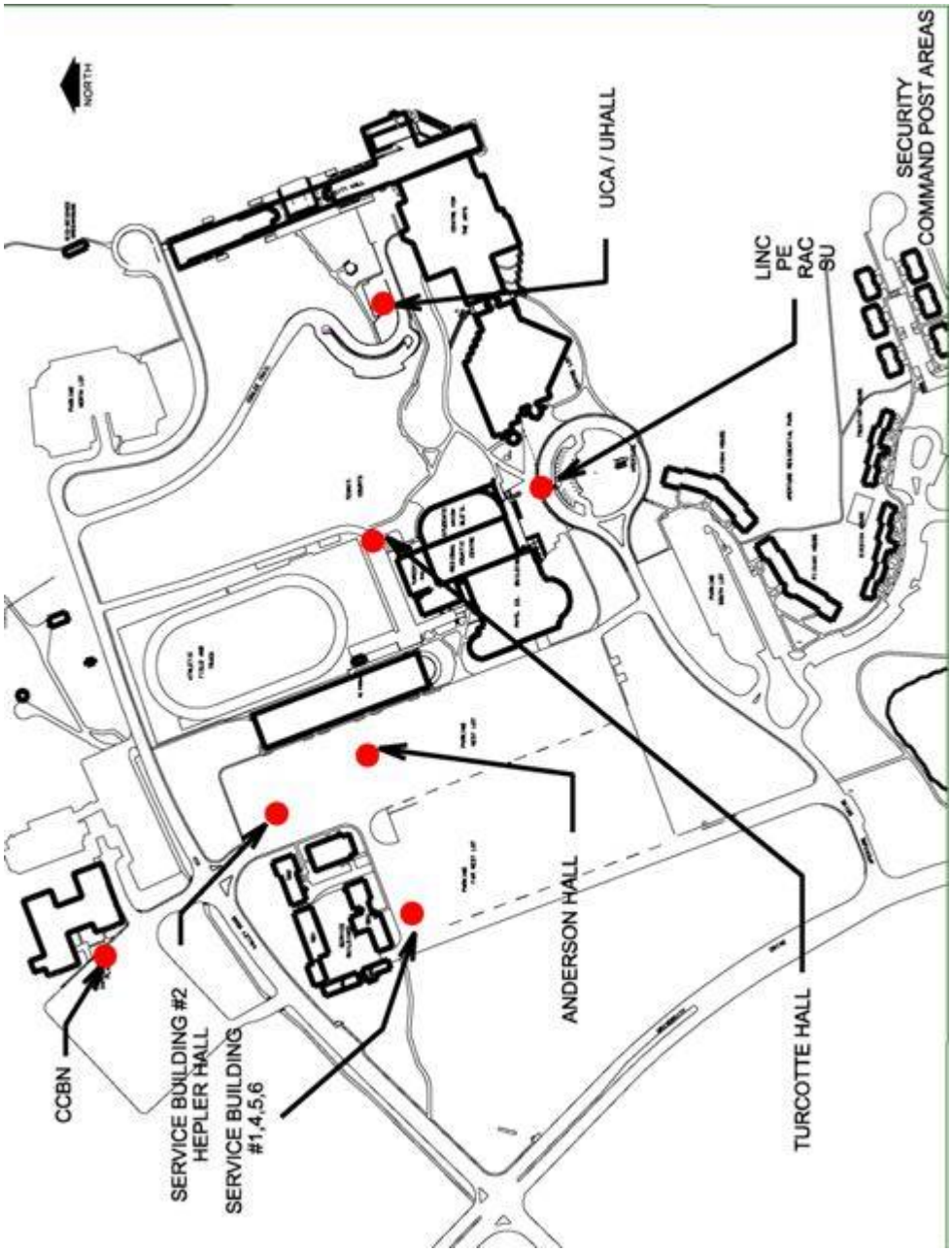
ENSURE DOORS ARE CLOSED
(PARTICULARLY THOSE IN THE IMMEDIATE FIRE AREA)

ACTIVATE THE FIRE ALARM SYSTEM

CALL THE FIRE DEPARTMENT 9-1-1

TRY TO EXTINGUISH (IF SMALL)

Security – Command Post Areas



UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

INCIDENT INVESTIGATION

PROCEDURES FOR RESPONDING TO AND REPORTING OF:

I. Injuries
II. Property Damage / Theft
III. Environmental Issues
IV. Automobile Accidents

I. INJURIES

Response To An Injury On-site U of L Campus:

- Call Security at **329-2345**

Transportation of Injured Persons Policy:

- Employees **cannot**, at any time, for any reason, drive an injured co-worker, visitor or student, to a clinic and / or hospital.

Response To An Injury Off-site U of L Campus:

Calgary or Edmonton Campus:

- Call SAIT Security on Calgary Campus.
- In Edmonton, call Building Security
- Call ambulance, if necessary
- Follow U of L "Transportation of Injured Persons" policy

Anywhere else on U of L business

- Follow response procedures at location
- Familiarize yourself with the accident / incident response policies & procedures of that specific organization before working at any off campus location.

Reporting an Injury On-site U of L Campus:

- Security will investigate and formally document the accident / incident and will inform Occupational Health & Safety and Insurance & Risk Management on campus.
- Reporting of accident / incident must be done within 24 hours if the injury occurs to faculty or staff during work, or to a student during the course of study.
- The casualty and / or observers must also document the event using the Campus Accident / Incident Report. This form can be found on the OH&S website under "***Administration***" on the U of L Home Page.
- Send the completed Accident / Incident Report form to Occupational Health & Safety in Anderson Hall.

INJURIES (cont.)

Reporting an Injury Off-site U of L Campus:

- Fax the completed Accident / Incident Report form to Occupational Health & Safety ***and*** Insurance & Risk Management at (403) 380-1872.

- Or call: Occupational Health & Safety at (403) 329-2099: Insurance & Risk Management at (403) 382-7132.

II. DAMAGE / THEFT OF U OF L PROPERTY

Response to Damage / Theft of U of L Property On-site U of L Campus

- Call Security at **329-2345**

Response To Damage / Theft of U of L Property Off-site U of L Campus:

Calgary or Edmonton Campus:

- Call SAIT Security on Calgary Campus.
- In Edmonton, call Building Security

Anywhere else on U of L business

- Follow response procedures at location
- Familiarize yourself with the accident / incident response policies & procedures of that specific organization before working at any off campus location.

Reporting of Damage / Theft to U of L Property On-site U of L Campus

- Security will investigate and formally document the accident / incident and will inform Insurance & Risk Management.
- No other formal report required at this time.
- In the event of U of L property loss, Insurance & Risk Management will contact the relevant person / department to process a property insurance claim, if applicable.

Reporting of Damage / Theft to U of L Property Off-site U of L Campus

- Campus Accident / Incident report, found on the OH&S website under " ***Administration***" on the U of L home page, must be completed as soon as you return to campus or within 48 hours.
- Fax the completed form to Insurance & Risk Management at 380-1872.

III. ENVIRONMENTAL INCIDENT

Defined by:

- Chemical spills, odors
- Water (or something) leaking
- Slippery surfaces such as pathways, parking lots, stair
- Lack of airflow in offices (i.e. Evenings, weekends)

Response to Environmental Incident On-site U of L Campus

- Call Security at **329-2345**

Response to Environmental Incident Off-site U of L Campus

- Notify responsible persons, as appropriate.

Reporting of Environmental Incident

- Person finding the spill is to formally document the incident using the Accident / Incident Form on the U of L website.
- Once report is submitted, Occupational Health & Safety will review and determine if a formal investigation is required.

IV. AUTOMOBILE ACCIDENT

Response to Automobile Accident On-site U of L Campus

- Call Security at **329-2345**

Reporting of Automobile Accident On-site U of L Campus

- Security will investigate and formally document the accident / incident and will inform Insurance & Risk Management.

Reporting of Automobile Accident On-site U of L Campus

- Fax a completed Accident / Incident report form to Insurance & Risk Management (403) 380-1872 or phone (403) 382-7132.

Reporting of Automobile Accident On-site and Off-site U of L Campus

Personal Vehicle – U of L Business

- If the accident occurs in your personal vehicle, call your personal insurance company immediately.
- Call Insurance & Risk Management as soon as possible. Depending upon the severity and the circumstances, the U of L's non-owned auto insurer may respond in excess of personal coverage.

Rental Vehicle – U of L Business

- Call the auto rental agency immediately.
- Call Insurance & Risk Management as soon as possible. The U of L's non-owned auto insurer must be notified in case required to respond in excess to rental agency insurance.
- Call AMEX if vehicle was rented using Corporate Card (may provide collision coverage).

If an injury occurs as a result of the Automobile Accident follow Injury Reporting Procedures as outlined in this document.

ACCIDENT / INCIDENT INVESTIGATION OVERVIEW

When an accident / incident occurs on the worksite, the Employee is responsible for reporting it immediately to their Supervisor. It is then the responsibility of the Supervisor to conduct an investigation with the help of the Employee.

The purpose of incident investigation is to determine direct and underlying causes, and implement immediate and long-term corrections in order to prevent re-occurrence.

There are four (4) essential steps in conducting an investigation. An overview of each of the four phases is presented here;

1. **Gather Facts** - Investigation techniques and methods are designed to discover facts. A fact is something that actually exists or has actually occurred; something known by observation or examination to be true or real. This is done mainly, by examining the scene and talking to people.

2. **Analyze and Evaluate the Facts** - This is a systematic and thorough study of the facts to determine causes and recommend corrective measures. (This is the step where we spend much of our time - applying the Incident Analysis Worksheet.)

3. **Document Findings** - A written report is necessary to communicate the findings of the investigation to management and affected employees and to ensure proper follow-up takes place.

4. **Follow -up** -This step is essential to ensure that the recommended corrective actions to prevent recurrence are actually implemented, and are working effectively.

These phases generally do not occur separately, or in a linear fashion. Rather the phases sometimes overlap: analysis and evaluation begins while the facts are being gathered (e.g. while getting an overview of the incident), and evaluation of the facts may well send you back to gather more information. The investigator must be careful not to let early analysis lead to premature conclusions.

Once an investigation is complete, the results and corrective recommendations must be shared with all Employees within that department. The report is to be signed off by the Director of Physical Plant and returned to the department Supervisor. Copies of all reports are kept on file within the department for 3 years.

In cases where the result is a loss time claim, the Supervisor is then responsible for sending a copy of the investigation to the OH & S Department on campus for review.

It should be noted that this investigation and report ***does not replace*** any required WCB or on-line reporting forms that are to be completed by the Employee and Supervisor, nor does it replace any investigations that need to be conducted by the OH & S department on campus. This is for the department's own investigation and follow-up procedures.

INCIDENT REPORTS OVERVIEW

The Security Department at the University of Lethbridge is the first response team for all Accidents / Incidents on campus.

Security Officers write up Incident Reports for all situations they respond to as well as conduct any follow-up investigations that are deemed necessary. Incidents are assigned 1 of 23 categories as outlined on the following pages.

The information on the Incident reports includes the following:

- Incident Number
- Type of Incident
- Date / Time / Location of Incident
- Date and Time Reported
- Name / Address / Phone Number of Person Reporting Incident
- Time Taken to Investigate
- Officer(s) Investigating Incident
- Details of Incident
- Follow-up Required
- Distribution of Report

INCIDENT ANALYSIS WORK SHEET

Injury/Loss:

Incident:

Immediate Causes:

Underlying Causes:

Corrective Action (Controls/Management System):

INCIDENT INVESTIGATION REPORT

Date of Incident: _____ Time: _____

Location: _____ Name of Person in Charge: _____

Name of Investigator(s): _____

Injuries - Persons Injured
Name: _____ Phone: _____

Address: _____

Description of Injury:
_____

First aid given? Yes No By whom? _____

Transported to medical aid? Yes No By whom? _____

Where to? _____ Name of Doctor: _____

When was the accident reported to Occupational Health & Safety?

Date: _____Time: _____

By Whom?:_____

Property Damage

Damage to property: Yes No Estimated Value: $ _____

Damage to equipment: Yes No Estimated Value: $ _____

Description:
_____
_____
_____

Party(s) Responsible for cost of replacement / repair:
_____
_____
_____

Person(s) involved/Witnesses

Name	Address	Phone

Incident Reported by: _____ Reported to: _____

Date Reported: _____ Time Reported: _____

Conditions at time of incident (weather, status of job, housekeeping, etc.)

_____
_____
_____

Description of incident (What was the job being done? What equipment, tools, materials, etc. were involved? What happened?) - Attach a diagram if necessary.

_____
_____
_____

What were the causes of the incident?

Immediate? (Unsafe Practices/Conditions)

_____
_____
_____

Underlying? (Personal/Work Environment Factors)

_____
_____
_____

Recommended action(s) to prevent recurrence?

Short-term?

_____
_____
_____
_____

Long-term?

_____
_____
_____
_____

Persons) responsible for implementing corrective actions)? Completion date?

_____
_____
_____

Completed

Date: _____

Name: _____ Signature: _____

Reviewed

Date: _____

Name: _____ Signature: _____

Reviewer's Comments:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

LOCATION OF FIRST AID KITS

1. **AH** AH1J2
2. **CCBN** EP12J1
3. **HH** HH1J01
4. **LINC** L814
   L9J1
   L10J1
   L11J1
5. **PE** PE1J2
   PE2J7
6. **SB #1** S11H5
7. **SB #2** S136
8. **SB #4** S17J4
9. **SUB** SU062
   SU1M2
   SU2M1
   SU3J1
10. **TH** TH1J1
    TH2J1
    TH3E1
11. **UCA** W4J15
    W5J15
    W6J15
    W7J15
    W8J15
12. **UH** B424
    C5J1
    D6J1
    C7J1
    C8J1

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

POLICIES & GUIDELINES

UNIVERSITY SERVICE VEHICLES

General Vehicle Safety Policies

All employees operating University of Lethbridge owned vehicles must possess a current Alberta Driver's License with the appropriate class designation to the Vehicles / Equipment he or she will be operating. A Driver's Abstract may be requested prior to commencement of employment, as decided on an individual basis.

The following is a list of University Vehicle Safety Policies:

- Smoking in University Vehicles is prohibited.
- Under no circumstances are passengers allowed to ride in the back of University Pickup Trucks.
- The maximum allowable number of passengers for any vehicle is equal to the number of seatbelts available.
- Passengers must at all times wear seatbelts when riding in University Vehicles.

Routine Services

University Vehicles are routinely serviced by the Mechanic in the Motor Vehicles Pool every 6 months or 5000 kms (whichever occurs more frequently) over and above the demand maintenance / repairs required.

Maintenance & Repairs

Each department is responsible for ensuring that the vehicles assigned to them are kept in proper operating condition. Any deficiencies should be reported to Work Control so that a work order can be issued to the Motor Vehicles Pool so that the repairs necessary can be carried out.

General Care

Each department is responsible for ensuring that the vehicles assigned to them are routinely cleaned inside and out. Employees within Physical Plant have access to the Power Washer located in the garage of Service Building #1. Operating instructions are posted on the wall by the Power Washer, as well, a copy of these instructions can be found in the Safe Work Practices section (Appendix 'A') of each safety manual. It is up to each department to ensure that all employees read and understand these instructions prior to operating washer.

Cell Phones

Employees are not permitted to talk on cellular phones or other communication devices while operating any University Vehicles or Machinery. The unit must be pulled over to a safe location and stopped before making or receiving a call.

First Aid Kits

First Aid kits are supplied for each vehicle. It is the responsibility of each department to ensure that these kits are checked on a regular basis and supplies are replenished as required.

Fire Extinguishers

The Security Van is supplied with a 5 lb. dry chemical ABC unit and a 5 lb. CO_2 unit. All other vehicles are equipped with a 2 ½ lb. (minimum) dry chemical ABC fire extinguisher.

The extinguishers in the Security van are checked on a monthly basis by Security. The remainder of the extinguishers, are checked once a year by Security.

Re-fueling of Vehicles

When vehicles are re-fueled, the date, vehicle number, mileage, amount of fuel dispensed, and name of employee must be recorded on the log sheet provided.

Avoid hauling fuel containers (ie. Jerrycans) in the back of pickups with plastic liners as sparks may be generated due to static electricity, causing ignition. Fuel containers transported in the back of pickups without liners must be secured during transport.

The use of ***cellular telephones*** is prohibited at or near the fuel pumps, as static charges from cell phones have been proven to ignite gasoline fumes. Ensure all cell phones are turned off while at the fuel pumps.

Occupational Health & Safety Statues and Regulations lists the following provisions on re-fueling of vehicles:

An employer shall ensure that a worker does not, and no worker shall

- *Smoke within 3 meters of a vehicle while it is being re-fueled*
- *Re-fuel a vehicle where there is any source of ignition within 3 meters of that vehicle.*

Storage of Vehicles

- At the end of each workday the University Vehicles are to be parked in the compound between SB #1 and SB # 4.
- All keys are to be locked up in the designated lock box at the end of each day.
- Employees are not authorized to take University Vehicles home at the end of his or her shift.

WORK ALONE POLICY – PHYSICAL PLANT

Under the guidelines of the work alone legislation, businesses that require employees to carry out work alone must conduct a hazard assessment of their worksite, to identify work alone situations.

Once situations are identified, preventative measures need to be taken to eliminate or reduce safety risks associated with working alone. An effective means of communication must be provided where possible to ensure employees can readily obtain help where necessary.

Each department within Physical Plant, conducted a hazard analysis for their area using the guidelines found in the booklet "Working Alone Safely: A Guide for Employers and Employees" as developed by Alberta Human Resources and Employment.

Once the assessments were complete, specific department policies were put into place to ensure risks were minimized for employees. These policies include one or a combination of the following:

- An effective means of communication by: Regular telephone, Cellular telephone, Portable Radios.
- Check in procedures when travelling away from U of L campus or to remote locations on campus.
- Regular visits by supervisors and checking in with fellow workers.
- Check in with Campus Security when working outside of regular scheduled shifts.

Department policies have been effectively communicated to all employees in regards to their responsibilities when working alone, and have been incorporated into the orientation procedures for all new employees within the various Physical Plant Departments.

BUILDING MAINTENANCE WORK ALONE POLICY

Date of Submission: April 11, 2001
Latest Revision: May 24, 2007

PURPOSE

To ensure that Building Maintenance staff working alone can do so safely.

OBJECTIVES

To develop procedures that will firstly eliminate risks associated with various work tasks, and secondly implement effective safety measures to minimize or control the risks where elimination cannot be achieved, in order for our employees to carryout their work in a safe manner.

DEFINITION

Working Alone - An employee is considered to be working alone if the employee works at a work site in circumstances where assistance is not readily available when needed.

WORKING ALONE SITUATIONS

- Roof related duties including inspections, repairs and maintenance.
- Traveling alone.
- Alternate work schedule.
- Carpenter / Paint & Sign Shops

EFFECTIVE MEASURES OF COMMUNICATION

All regular Building Maintenance employees are provided with cellular phones to carry on their person during regular working hours. Casual employees carry pagers that are linked to The University of Lethbridge in-house paging system

PROCEDURES:

- **Roof Related Duties**: Building Maintenance staff will perform all roof related work with a minimum task force of two, thus eliminating all risks associated with working alone.

- **Traveling Alone**: This involves Building Maintenance staff who travel alone in the following circumstances:

  Delivering / obtaining supplies from remote storage buildings and local suppliers:

  Building Maintenance staff will contact Physical Plant Service Centre and advise of the travel plan. The plan will include the destination, time of departure and expected time of return. The staff member is to contact the Service Centre upon returning.

  Service Centre staff will record the travel plan. Should the employee not contact Service Centre at the expected time of return, the Service Centre will attempt to contact the employee via their cellular phone. If attempts to contact the employee fail the Service Centre staff will notify the Superintendent of Buildings and advise that the employee is overdue to return. The Superintendent will then take measures to locate the overdue employee. These measures may include:

- Phoning the employee
- Contacting co-workers
- Contacting the Operations Supervisor
- Contacting supplier to identify the times of arrival / departure
- Personally retracing the travel route
- Contacting campus Security for assistance
- Contacting local police for assistance.

If Service Centre is unsuccessful in contacting the Superintendent of Buildings, they should attempt to contact in the following order: the Building Maintenance Operations Supervisor; Associate Director, Physical Plant; Executive Director, Physical Plant; Superintendent of Security on his / her cell phone or at their personal residence. The contact person will then take the necessary measures to locate the employee.

Traveling to remote facilities on / off campus to perform routine maintenance work:

The procedure for traveling to remote facilities remains the same as delivering / obtaining supplies as mentioned above with the following exceptions.

When traveling to remote facilities off campus, ie. Gushel Studio, Westcastle etc. Building Maintenance staff will travel together with a minimum work force of two at all times to eliminate the working alone situation, and the employees must carry a cellular telephone with them to call for immediate assistance should it be required. A detailed travel plan indicating destination(s) time of departure, time of return and the contact cellular number must be relayed to Service Centre prior to leaving.

Should the travel plan require the employee to return to campus after regular working hours, Physical Plant Service Centre will notify Campus Security with the travel plan indicating the expected time of return. The employee in this situation will contact Campus Security upon returning. Should the employee not contact Campus Security at the expected time of return, Campus Security will notify the Superintendent of Buildings on his cell phone or at their personal residence and advise that the employee is overdue. The Superintendent of Buildings will then take measures to locate the overdue employee. These measures may include:

- phoning the employee
- contacting co-workers
- contacting the Operations Supervisor
- personally retracing the travel route
- contacting local police for assistance

If Campus Security is unsuccessful in contacting the Superintendent of Buildings, they should attempt to contact, in the following order: the Building Maintenance Operations Supervisor; Associate Director, Physical Plant; Executive Director, Physical Plant; Superintendent of Security on his / her cell phone or at their personal residence. The contact person will then take the necessary measures to locate the employee.

Alternate Work Schedule:

When a Building Maintenance employee is scheduled to work, or is called in to work at times other than his / her regular scheduled shift, the employee is to contact Campus Security

immediately upon arriving on campus. The employee is to inform Campus Security of the nature of work to be performed, the location and the expected completion time. Upon completion of the work, the employee is to contact Campus Security and advise of their departure.

Should the Building Maintenance employee not contact Campus Security at the expected time of completion, Campus Security will then take measures as indicated above to locate the employee.

Carpenter and Paint & Sign Shops:

There is a phone in the hallway immediately outside the door to the carpenter shop and paint room, as well, there is a phone inside the sign shop that can be used to call for assistance if needed. The employees also check in at the beginning of their shift, as well as morning and afternoon breaks, lunch (12:00) and hand in their keys at the end of the day.

KEY RINGS & CELL PHONES

1. Employees are to carry keys only during regular hours of work, 8:00 am to 4:00 pm Monday through Friday, unless other arrangements have been made with supervisors. .

2. All full-time employees carry department assigned cell phones. Each employee is responsible for the security of their own phone.

3. Casual employees carry pagers linked to the University paging system, that get locked up with their key rings at the end of the work day.

4. Keys are stored in a secure key lock-up in the hallway SC13H1 outside of the Building Maintenance Shops in the new Services Complex. This key lock-up monitors the removal and replacement of the keys.

5. All key rings are to be returned to the lock-up at the end of each day.

6. Any additional keys needed on a per job basis are to be obtained through the Physical Plant Service Centre.

7. Prior arrangements with the Building Maintenance Superintendent or Operations Supervisor will have to be made for accessing / returning keys and phones for work duties scheduled or performed at hours outside of the regular work day. Ie. Convocation, Orientation, Overtime etc.

8. Campus emergencies access provided by either the Building Maintenance Superintendent or Operations Supervisor or Security upon authorization from the above.

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

PROGRAM ADMINISTRATION

PROGRAM ADMINISTRATION OVERVIEW

MONTHLY SAFETY MEETINGS

The departments of Building Maintenance, Grounds Maintenance, and Caretaking Services conduct joint monthly safety meetings. These meetings take place the first Friday of the month, with the host of the meeting rotating amongst the three departments.

The department hosting the meeting chooses the topic, conducts the presentation and records the minutes of the meeting. Each employee that attends signs the attendance sheet. A copy of the attendance sheet can be found in this section.

The meeting format ranges from presentation videos, to an overview of safe work practices in relation to current issues or seasonal work being carried out or coming up within the departments.

The minutes from the safety meetings must be forwarded to the Executive Director of Physical Plant to review. The Executive Director must sign the minutes and return to the appropriate department. The Executive Director of Physical Plant must also attend a safety meeting for each of the departments on a yearly basis, recognizing the safety achievements of the employees.

WEEKLY DEPARTMENT MEETINGS

Each Monday morning all of the divisions in Building Maintenance meet to discuss the past week' s work and any new work coming up. Any safety issues or incidents are discussed at this time.

INCIDENT TRENDS

Each time an employee is involved in an accident / incident, a form must be completed and sent to the coordinator of OH&S, as outlined in the Accident / Incident section of this manual. A copy of the report must go in the employee's personal file for record purposes and retained for three years.

An Incident Trend spreadsheet has been developed to track the amount of incidents each individual employee has had over the past year as well as the number of each type of incident occurring within the department. This information is used to determine where more training is required on an individual basis, as well as for the entire group, in order to provide a safer workplace for all.

When a new incident occurs, the type of incident is recorded along the top of the spreadsheet and the date of the incident is recorded in the corresponding space for the Employee. A sample of the Trend spreadsheet can be found in this section. ***The results of these accidents / incidents are not accounted for on the Trends or Lost Time Days Spreadsheets or in the Lost Time Claims calculation as outlined in this section***

LOST TIME DAYS

For the accidents / incidents resulting in lost time, the number of days is recorded on the Lost Time Days (LTD) Spreadsheet in the corresponding month for the employee. A ***Lost Time Day*** is defined as any regular scheduled work day that is missed due to an accident / incident occurring on the job.

LOST TIME CLAIMS RATIO

At the end of each year the Lost Time Claims (LTC) ratio is calculated based on the number of Lost Time Days in comparison to the amount of manhours recorded for that employment year. When calculating the LTC ratio, all employee's manhours are accounted for ie. Full-Time, Part-Time, Temporary, and Casual employees. Any absence from work that is not a result of an accident / incident is not accounted for in the manhours or Lost Time Day values ie. vacation days, sick days, days missed as a result of an injury outside of regular scheduled work.

EMPLOYEE EVALUATIONS

Once a year, Employees are evaluated on their job performance. Included in this evaluation Employee safety comprehension and compliance is addressed. The results recorded on the Trends Spreadsheet, is taken into consideration for the evaluation on safety issues.

The evaluation is reviewed with the Employee so they are fully aware of the results. Any feedback, concerns, or suggestions that the Employee may have is discussed at this time. A copy of the evaluation is sent to Human Resources to be placed on the Employee's file, and the Supervisor keeps a copy on file in the department. Employees are also given a copy.

DISCIPLINARY PROCESS FOR VIOLATION OF SAFETY POLICIES & PRACTICES

In the event that a Union Employee's actions are found to be in violation of the safety policies and practices outlined in the Health and Safety Program, the disciplinary process will follow the process outlined in the AUPE Agreement as stated under Article 13 – *Personal Files and Discipline.*

In the event that an APO's actions are found to be in violation of the safety policies and practices outlined in the Health and Safety Program, the disciplinary process will follow the process outlined in the APO Agreement as stated under Section 10 – *Progressive Performance Improvement.*

LOST TIME CLAIMS – (LTC)

Lost time claims are a measurement of the number of lost time days in comparison with the amount of manhours logged over the claims year.

$$LTC = \frac{\#LTC(days) \times 200{,}000}{[\#\ Hours\ Worked\ /\ year]}$$

ie.

17 lost time days
1,000,000 manhours / year

$$\frac{17 \times 200{,}000}{1{,}000{,}000} = 3.4 / 100\ person\ years$$

SAFETY MEETING

TOPIC: _____

DATE: _____

TIME: _____

NAME: (PLEASE PRINT)	SIGNATURE	DEPARTMENT

Minutes: _____

Signed:

Meeting Coordinator / Department	Date Submitted

Approved by:

Doug Parker Executive Director Physical Plant & Operations	Date Approved

TOOLBOX MEETING
Building Maintenance Department

DATE: _____

NAME: (PLEASE PRINT) **SIGNATURE**

_____ _____ _____
_____ _____ _____
_____ _____ _____

SAFETY ITEMS DISCUSSED: _____
_____
_____
_____
_____
_____
_____
_____
_____
_____

EMPLOYEE SUGGESTIONS: _____
_____
_____
_____

CORRECTIVE ACTION: _____
_____
_____
_____

Reviewed By:

_____ _____
Team Foreman Date Reviewed

Comments: _____
_____
_____
_____

Forwarded To: _____ Date: _____
Action Required:_____
_____
_____
_____
_____

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

SAFE WORK PRACTICES

(NAME)

•

BANDSAW

- The saw guide must be adjusted within one-fourth inch of stock to be cut before power is turned on.
- Do not allow fingers to come closer than two inches to saw when cutting stock.
- Do not allow hands across the saw line when operating bandsaw.
- Do not stand at right hand side of bandsaw machine. A serious accident might result if saw should break.
- If necessary to back saw out of a long cut, power should first be turned off and machine allowed to come to a dead stop.
- Be sure the radius of your cutting is not too small for the width of the blade of the saw.
- Cylindrical stock must never be cut on bandsaw.
- Stock must not be cut on the bandsaw unless such material is firmly supported against downward thrust of the saw. Do not saw into the toe of a long bevel cut unless the toe is on the table.
- If bandsaw blade should break while machine is in operation immediately shut off power before changing blade. A rhythmic click may indicate a cracked blade. Shut off the machine and change out blade.
- If help is needed to support heavy or long work, the helper should never pull or guide the work. He supports the weight, the operator runs the machine.

CHOP SAW

- Safety glasses and hearing protection must be worn at all times when operating Chop Saw.
- Keep working area clean at all times.
- Inspect saw to ensure all guards are in place and cords, blades and switches are well maintained and in safe operating condition.
- Pick a clean area, hopefully 20 to 30' radius area, so the pipe can be turned freely without obstructions.
- Set up Chop Saw on a level base.
- Set up blocks approximately 10' back of power vise also on a solid level base. This is to hold opposite end of pipe being cut.
- Make sure power supply is properly grounded.
- Mark location on pipe to be cut and place in Chop Saw. Place cutting wheel on mark and pull trigger to start saw.
- If pipe being cut extends more than approximately 3' in front of chop saw you should also have blocks in front.

USE OF CLEANING SOLVENTS AND FLAMMABLES

Cleaning solvents are used in the day-to-day construction work to clean tools and equipment. Special care must be taken to protect the worker from hazards, which may be created from the use of these liquids. Wherever possible, solvents should be nonflammable and nontoxic.

The foreman must be aware of all solvents / flammables that are used on the job, and be sure that all workers who use these materials have been instructed in their proper use, and any hazard they pose.

The following instructions or rules apply when solvents / flammables are used:

- Use non-flammable solvents for general cleaning.
- When flammable liquids are used, make sure that no hot work is permitted in the area.
- Store flammables and solvents in special storage areas.
- Check toxic hazards of all solvents before use. Refer to Material Safety Data Sheets (MSDS).
- Provide adequate ventilation where all solvents and flammables are being used.
- Use goggles or face shields to protect the face and eyes from splashes or sprays.
- Use rubber gloves to protect the hands.
- Wear protective clothing to prevent contamination of worker's clothes.
- When breathing hazards exist, use the appropriate respiratory protection.
- Never leave solvents in open tubs or vats - return them to storage drums or tanks.
- Ensure that proper containers are used for transportation, storage and field use of solvents / flammables.
- Where solvents are controlled products, ensure all employees using or in the vicinity of use or storage are trained and certified in the Workplace Hazardous Materials Information System (WHMIS). Ensure all WHMIS requirements are met.

DEFECTIVE TOOLS

Defective tools can cause serious and painful injuries.

If a tool is defective in some way, **DON'T USE IT**.

Be aware of problems like:

- chisels and wedges with mushroomed heads
- split or cracked handles
- chipped or broken drill bits
- wrenches with worn out jaws
- tools which are not complete, such as files without handles

To ensure safe use of hand tools, remember:

- never use a defective tool
- double check all tools prior to use
- ensure defective tools are repaired

Air, gasoline or electric power tools, require skill and complete attention on the part of the user even when they are in good condition. Don't use power tools when they are defective in any way.

Watch for problems like:

- broken or inoperative guards
- insufficient or improper grounding due to damage on double insulated tools
- no ground wire (on plug) or cords of standard tools
- the on/off switch not in good working order
- tool blade is cracked
- the wrong grinder wheel is being used
- the guard has been wedged back on a power saw

USE OF DISK SANDER

- Select correct grade of abrasive sheet.
- Table fence and guide must be correctly adjusted and tight. The clearance between sanding disk and table or rest should not exceed one-sixteenth of an inch.
- Goggles must be worn.
- Sand only on the downstroke side of disk.
- Do not hold small pieces in hand. They have a tendency to rotate, with the attendance danger of pulling your fingers against the revolving disk. A few small pieces should be sanded by hand. For a large number, devise a jig to hold them securely.
- If you must leave sander before finishing the job, turn off the power.
- Stop sander to make adjustments.
- Never touch a moving sanding disk.
- Stop the sander by shutting off power and sanding a scrap piece of wood.
- Never operate the disk sander if the paper is loose. Report the condition to Instructor.
- Move the work about to avoid heating and burning a section of the paper.

USE OF DRILL PRESS

- Never attempt to use a regular auger bit on the drill press or in the hand drill. Auger bits for this machine have the lead screw cut smooth and the square tang cut off.
- Clamp small pieces in a drill vise or clamp them to the table.
- Keep the table clean, but clean it with a brush.
- Wear a shop cap or tie up the hair when working around whirling machinery. Rings, wristwatches, and gloves should not be worn.
- Check to see that the chuck key, drift, and all wrenches are removed before starting the machine.
- Be certain your drills are ground in balance so that they do not tend to whip the work.
- Beware of the coasting machine.
- In using a shaping or routing attachment for the drill press, be sure to study the safety rules for the shaper.
- On deep cuts back out frequently to clean and cool the bit.
- Center punch for drill point. Use only straight sharp drills.
- Drill easily without forcing the bit.

ELECTRICAL SAFETY

Electricity is a powerful form of energy. If abused or used improperly, it can be hazardous, cause shock, start a fire or even kill.

Follow these precautions when working with electrically powered tools and equipment:

- Electrical repairs to tools and equipment, should only be performed by qualified individuals.
- Never use metal ladders near electric power lines.
- Rubber or plastic coated tool handles should be regularly inspected for cracks, cuts and wear.
- Double insulated tools require only two-pronged connections and should be clearly marked.
- Never stand in water when operating electrical equipment. If you must work in damp areas, use a ground fault circuit interrupter (GFCI). If one is not available, insulate yourself by wearing rubber gloves and rubber boots or stand on insulated platforms or mats.
- Before you start cleaning or adjusting a power tool, disconnect it from the power source.
- If an electrical piece of equipment malfunctions, disconnect and lock out the power source immediately and report the trouble to your supervisor. Make sure the power source is positively locked out when the equipment is being worked on.
- Tag all defective or damaged tools and return them for repair.
- Do not overload electrical circuits; this can cause a fire.
- Never put water on an electrical fire. Use the proper type of fire extinguisher such as one with an "ABC" classification.
- Never cut or remove the grounding prong from a plug.

PROPER USE OF PROTATING EMERGENCY FLASHING WARNING LIGHTS ON VEHICLES

PRETRIP INSPECTION

- Hydraulic oil
- Leaks
- Hydraulic lines & hoses (fittings & condition)
- Hydraulic cylinders (condition, leaks)
- Hydraulic cylinders pins and retainers
- Boom pins and retainers
- Boom for cracks and damage
- Loose bolts (wire lies)
- Cable condition
- Hand contact boom waxed weekly, cleaned with static cloth daily (minimum)
- Boom cradle (condition & safety switch)
- Boom lock and mount (bolts, cracks)
- Pistol grip control (air lines)
- Condition of lower controls (turrent)
- Rotation motor
- Turrent (loose bolts, leaks, welds and cracks)
- Rescue pack
- Boom rescue strap and O ring
- Emergency power switches (torrent, boom outriggers)
- outriggers (pins, welds & cracks)
- Outrigger pads
- Bucket condition (liner, cover)
- Bucket attachments (bolts, pins, cylinders)
- Bucket tilt lever locked (lay down lever)
- Keep deck clean (good housekeeping)

JIB

- Controls (condition)
- Air lines to pistol control
- Jib and keeper pins
- Winch line
- Winch line pulleys
- Jib position cylinder (bolts & condition)
- Hydraulic lines
- Jib load chart and angle indicator

SET UP

- P.T.O.engaged
- Brakes applied
- Use outrigger and boom selector
- Lower outriggers raising unit slightly off ground (pads as required).

OPERATING PROCEDURES

- Unlock boom

- Raise unit to top of pole using lower controls
- Lower unit to allow entry into bucket
- Enter bucket and hook-up lanyard
- Raise up to over center
- Lower to ground while over center
- Raise and move side to side
- Return over center and stow properly

FIRE AND USE OF FIRE EXTINGUISHERS

Good housekeeping is essential in the prevention of fires. Fires can start anywhere and at any time. This is why it is important to know which fire extinguisher to use and how to use it.

Always keep fire extinguishers visible and easy to get at. Fire extinguishers have to be properly maintained to do the job. Where temperature is a factor, ensure that care is taken in selecting the right extinguisher.

Types of Fires

Class A: These fires consist of wood, paper, rags, rubbish and other ordinary combustible materials.

Recommended Extinguishers
Water from a hose, pump type water can, or pressurized extinguisher, and soda acid extinguishers.

Fighting the Fire
Soak the fire completely - even the smoking embers.

Class B: Flammable liquids, oil, and grease.

Recommended Extinguishers
ABC units, dry chemical, foam and carbon dioxide extinguishers.

Fighting the Fire
Start at the base of the fire and use a swinging motion from left to right, always keeping the fire in front of you.

Class C: Electrical equipment

Recommended Extinguishers
Carbon dioxide and dry chemical (ABC units) extinguishers.

Fighting the Fire
Use short bursts on the fire. When the electrical current is shut off on a Class C fire, it can become a Class A fire if the materials around the electrical fire are ignited.

FLAMMABLE & TOXIC MATERIALS

Flammable Products

Certain products in use may contain solvent components such as xylene or propanol. These solvents have relatively low flash points and will ignite when exposed to sparks or open flames. The following guidelines must be observed:

- No smoking in or near the work area. Post "No Smoking" signs throughout the work area.
- Type ABC fire extinguishers should be located in easily accessible stations in the work area.
- No open flames or welding torches should be in the work area.
- Enclosed areas create explosive conditions. Use of explosion-proof fans to disperse the vapors, and bring in fresh air.
- Ascertain ventilation requirements prior to using hazardous materials.

Toxic Materials

Toxic or poisonous materials can be transmitted either by the inhalation of vapors, or contact with bare skin. Caution should be exercised when handling uncurled material or solvents.

- The specific vapor respirator required must be determined prior to starting.
- Wear goggles when mixing, or applying.
- Wear gloves, which extend 3/4 upwards the length of employee's forearm. Wear rubber gloves when washing tools with solvent.
- Wear long sleeve shirts and pants.
- Wear protective foot coverings, either rubber boots, or a plastic liner inside shoes.

FORKLIFT OPERATION

- Walk around the-forklift and check the following:
    - Proper spacing of forks for material
    - Fluid levels and fuel supply
    - Wheels/ tires for condition
    - Obstructions around the forklift
- Check back up alarm operation
- Check lights:
    - Headlights
    - Taillights
    - Revolving lights
- Start the forklift and let it warm up.
- Checks to see if all lights and gauges are operational on the control panel,
- Check operation of all moving parts.
    - Foot, parking and deadman seat brake
    - Clutch and gear shift
    - Steering
- Lift and tilt mechanism
- Check the working area for obstructions and other personnel.
- Move material around in a safe manner.

NOTE: Do not exceed the lifting capacity of the forklift at any time.

GRINDING

Severe injury may occur if proper protective equipment is not used and properly maintained.

- Check the tool rest for the correct distance from the abrasive wheel: maximum 1 /8" or 3 mm.
- Replace the grindstone when adjustment of the rest cannot provide 1/8" or 3 mm clearance.
- If the wheel has been abused and ground to an angle or grooved, reface the wheel with the appropriate surfacing tool.
- Protect your eyes with goggles or a face shield at all times when grinding.
- Each time a grinding wheel is mounted, the maximum approved speed stamped on the wheel bladder should be checked against the shaft rotation speed of the machine, to ensure the safe peripheral speed is not exceeded. A grinding wheel must not be operated at peripheral speed exceeding the manufacturer's recommendation.
- The flanges supporting the grinding wheel should be a maximum of 1/3 the diameter of the wheel, and must fit the shaft rotating speed according to the manufacturer's recommendation.
- Bench grinders are designed for peripheral grinding. Do not grind on the side of the wheel.
- Do not stand directly in front of grinding wheel when it is first started.

HANTAVIRUS

What is it?

- A virus carried by deer mice.
- The virus is in their urine and droppings.

How do people get Hantavirus?

- People may be infected- by contact with mouse droppings when cleaning out garages, sheds and cabins where mice lived over the winter.
- Sweeping or vacuuming droppings, releases the virus into the air and it is breathed in.
- It is not spread from person to person.

Do other animals carry Hantavirus?

- The only known carrier is the deer mouse (reddish-brown or grey with white fur on the belly and feet.)
- Other rodents may carry the virus so all rodents should be treated as carriers.
- Hantavirus has not caused illness in pets or spread from pets to people.

What signs and symptoms can you have?

- Early symptoms are flu-like: fever, body aches, chills and headache.
- They occur 1-2 weeks after being infected.
- Breathing problems leading to hospitalization occur 2-15 days after early symptoms.

Who is at risk for Hantavirus?

- Only a small percent of the people who come in ontact with the virus get ill.
- Most cases have occurred in people with close contact to mice or mice droppings.
- Most cases occur in rural areas.

How do you prevent Hantavirus?

Keep mice / rodents away by:

- Storing food and pet food in metal or plastic containers.
- Sealing holes(anything over 6mm or ¼ in) with steel wool or cement to prevent entry.
- Hauling away trash, old vehicles, old tires where mice / rodents can nest
- Storing garbage in containers with tight fitting lids.
- When entering a building where mice / rodents may live wear a mask so as not to breathe in the dust in the building.
- If using traps or poisons to control mice beware of the danger to children and pets.
- Wild mice should not be kept as pets.

When cleaning mice/rodent infested areas:

- Air out the area for 30 minutes first.
- Wear rubber or plastic gloves.

- Also wear a mask so dust is not inhaled.
- When cleaning heavily contaminated areas a HEPA mask may be purchased at safety supply stores.
- Soak dead rodents, nests, droppings and contaminated items in a 1 to 10 bleach / water solution.
- Pick up debris and place in double plastic bags.
- Do not sweep or vacuum.
- When clean-up is done seal bags, and place with regular garbage for routine pickup. After bags have been removed mop floors with soap, water and then a bleach / water solution.
- Dirt floors can be sprayed with a 5 to 10 bleach / water solution.
- For heavily infested areas contact a pest control service or a public health inspector for detailed information.

After clean up:

- Wash hands well.
- Wash gloves in a 1 to 10 bleach / water solution or dispose of.
- Used traps should be rinsed with a 1 to 50 bleach solution before being reused.

HOUSEKEEPING

- Keep aisles, walkways and stairs clear.
- Do not block fire exits and fire fighting equipment with materials.
- Materials should be stored with adequate room between for easy access.
- Tools and materials should be cleaned up and put away in designated storage areas after a job is done and at the end of each workday.
- Keep all articles to be disposed of in a designated location and remove regularly.
- Clean up spills immediately in order to avoid a slipping hazard.
- Store flammable liquids in approved sealed containers away from open flame, sparks or sources of ignition.

JOINTER

- Guard must be kept over knives at all times while jointer is being operated.
- The depth of the cut must be adjusted before power is turned on.
- A push stick must be used when jointing narrow or flat pieces of stock.
- The jointer must not be used for strips less than one inch wide.
- The end grain of pieces of wood less than 12 inches wide must never be run over the jointer. Pieces12 inches and wider can be successfully jointed against the end grain. In performing this operation, first run the end of the board on to the revolving blade for about 1 inch, then turn the board around and joint the end all the way across; this prevents splitting.

HAND POWERED LIFTS, ROUSTABOUTS, AND HYJACKS

Winch or jacking devices are great for moving heavy materials or apparatus - they are safe too if the following points are observed:

- Check the equipment for defects before starting the work. Make sure that safeties, catches, brakes and hydraulic hoses are in working order and that there are no frayed cables or loose gears, cogs, or ratchets. Report all mechanical or hydraulic problems to your supervisor immediately - do not use a malfunctioning device.

- Familiarize yourself with the manufacturer's special instructions for safety. Review and check out emergency stopping procedures and load lowering requirements.

- Plan what you intend to accomplish in advance. Before you move a loaded lifting device that has casters or wheels for mobility, make sure the load is secure and the lifting mechanism is set at the lowest operating position. Only move loads over level and even surfaces.

- Do not exceed the device's capacity for lifting loads, heights and travelling limits. Block wheels and casters before lifting.

- Check the attachment points of the tackle blocks and make sure they are strong enough to support the load.

- Position the lift directly under the final position to where equipment or materials is to be raised.

- Never lift the load where it may come in contact with electric power lines, conduit or bus duct unless the electric service has been locked out.

- Check for balance and load distribution, to prevent the lift from tipping or overturning.

- Make sure that only properly instructed personnel operate the lifting device.

- Never indulge in horseplay or practical jokes with power lifting equipment.

USE OF METAL SCAFFOLDS

There are various types of metal scaffolds and they all have a right and wrong way to be erected.

The misuse of scaffolding is the cause of numerous serious injuries. Every worker who designs or constructs a scaffold should be competent and know what the manufacturer's specifications are for that type of scaffold.

The scaffold type, which will be the best suited for the job and capable of withstanding the loads to be imposed on it must be determined before the job begins.

Ensure that:

- The scaffold you intend to use is the correct one for the job.
- The location in which the scaffold is to be constructed is level or is capable of presenting secure footing by use of mudsills or some other device.
- The scaffold will be erected by a competent worker.
- Legislative and manufacturer's requirements have been complied with.
- Safe access and egress to both the scaffold and the general work area has been provided.
- Leveling adjustment screws have not been over extended.
- Tower scaffolds have outriggers or are guyed and have all component parts secured in place (i.e. cross braces, pins, lateral braces).
- Scaffold work platforms have a perimeter guardrail
    - Horizontal rail - 0.92 meters to 1.07 meters above the platform.
    - Intermediate rail - Horizontal rail midway between scaffold platform and top rail.
    - Toe board - Horizontal member at platform level no less than 140mm in height above the platform level.
- Scaffold planks are of number one grade materials with maximum spans of 3.1 meters on light duty and 2.3 meters on heavy duty with a maximum projection beyond the ledger of no more than 300 mm.

MOBILE AERIAL WORK PLATFORM

- *Employees may only operate machine if 'Mobile Aerial Lift Training' course has been taken.*

- *Pre-Use Inspections – Inspect or Test the Following*:

  • Operating and emergency controls
  • Safety devices and limit switches
  • Personal protective devices
  • Tires and wheels
  - Equipment structure
  - Air, hydraulic and fuel systems for leaks
  - Loose or missing parts
  - Cable and wiring harnesses
  - Placards, warning, control markings and operating manuals
  - Handrail systems including locking pins
  - Engine oil level
  - Battery fluid level
  - Coolant level
  - Propane bottle secured (if equipped)
  - Parking brake
  - Horn

- *Function Test:*

  - Base functions and operation
  - Basket function and operation
  - Height / speed limiter switch (put machine in low speed when platform is raised)
  - Motion alarm
  - Hydraulic function test
  - Emergency controls

- *Work Area Inspection:*

  • Manhole covers, grating or unstable surfaces
  • Ramps, inclines or rough surfaces.
  • Electrical hazards overhead
  - Underground utilities
  - Pedestrian / Vehicular traffic
  - Ground Condition

- *Use of Equipment:*

  - Never modify or alter equipment unless approved by the manufacturer.
  - Never extend work platform with planks or other equipment.
  - Always wear fall restraint.
  - Fall restraint should be a 4' lanyard.
  - Keep platform clean and free of tripping hazards.
  - Never operate equipment on incline.

- Do not exceed equipment's working load limit.
- Make sure weight stays centered on platform.
- Only use machine as it is intended.
- Do not exceed side loading on platform.

- *Operating Procedures:*

  - Perform pre-use safety inspections (see pre-use inspection) before each use. The aerial platform shall be given a visual inspection and functional test. If any problems are encountered, the aerial lift shall not be used and reported immediately to the Supervisor and Mechanic.

  - Do not exceed recommended weight capacity.

  - A workplace inspection shall be performed for any hazards such as manholes, roadway problems, slopes, overhead obstructions, wind and weather conditions, inadequate surface and support to withstand all load forces imposed by the aerial platform in all operating configurations and presence of unauthorized persons.

  - No one shall travel in a basket, platform or other elevated or aerial device that is moving on a roadway or worksite if road conditions, traffic, overhead wires, cables or other obstructions create danger to the operator or workers.

  - Ensure all required PPE is worn when operating aerial lift (see Info Sheet for Safety Belts, Lanyards and Lifelines).

  - Do not climb on outside of equipment.

  - Do not move the machine while platform is in an elevated position.

USE OF NON-POWERED HAND TOOLS

Common hand tools, which many people take for granted, frequently are the most abused. Misuse of hand tools can become a habit that will cause accidents.
Some of the basic rules governing the use of hand tools are as follows:

- Use the right tool for a job. Never use a makeshift or improper fitting tool. Refuse to use tools that aren't in first class condition and report those that give you problems to your supervisor.

- Use wrenches of the right size for the job. Face the jaws of an adjustable wrench in the direction of the pull.

- Make certain that pipe wrench jaws are sharp and chains in good condition so they will not slip.

- Use only tools in good condition. Clean all grease and dirt. Do not use tools with improper handles, including those that are cracked, broken or loose. Hammers or chisels with mushroomed or broken heads should not be used.

- Keep keen-edged blades sharp; store them safely when not in use. Store them with the sharp edge protected. This will help avoid cuts, as well as protect the sharp edge.

- Do not use a hammer with a hardened face on highly tempered tools such as a drill, file, die or jig. Chips may fly.

- Never apply a wrench to moving machinery; stop the machine, then remove all tools before starting it again.

- Never handle any tool in such a manner that you can be injured if it slips. Think about your movements and position your body accordingly.

- Always wear safety goggles when working with hand tools. You only get one pair of eyes.

- Don't carry hand tools in a way that will interfere with using both hands when climbing a ladder.

- Tools should not be put down on scaffolding, overhead piping, on top of step ladders, or other locations from which they could fall on persons below or into equipment.

- Workers carrying tools on their shoulders should pay close attention to clearances when turning so that they will not strike nearby fellow workers.

OVERHEAD DOORS

The following precautions should be reviewed periodically to reduce the number of incidents involving overhead doors.

- Always make sure the overhead door has come to a complete stop before driving through the doorway.
- If the door fails to work properly, get out of the vehicle and push the stop button.
- Don't walk under an overhead door that is not working properly. They are extremely heavy and could cause serious injury or death should they come down.
- Caution: If the overhead door is not working, do not push any other button or try to bring the door down by any other means. Notify Work Control Centre (2602) for issue of a work order.

SURFACE PLANER

- Be familiar with the stopping mechanism of the machine. Know the location and method of operating the feed release and brake if one is furnished with the tool.
- Get in the habit of standing to one side of the infeed, out of line with the work.
- As the feed rolls take the work, YOU LET GO. Do not follow the work with the hands.
- For maximum safety, the shortest board to be run should be about two inches longer than the distance between the centers of the infeed and outfeed rolls.
- In feeding short pieces, be careful of fingers and thumb. The rolls sometimes tip short boards up a little as they go under, and the fingers may be pinched between the board and the table.
- If the board stops with the end on the infeed table, do not try to push it with fingers, jar it with a longer plank or shut down and lower the table.
- Examine wood for defects, such as spike knots, which might cause ends or short pieces to break off under pressure of the feed rolls. These pieces can be violently thrown out by the cutter head.
- DO NOT SEND CROSS GRAIN THROUGH THE PLANER. THIS MACHINE IS INTENDED FOR PLANING WITH THE GRAIN.
- If a board sticks under the cutter head, shut off the machine to avoid burning the knives. On machines not provided with a sectional infeed roll or a chip breaker, kickback fingers should be installed as a guard.
- Stock to be planed to thin dimensions should be placed on top of a slightly larger board and run through. In this way there can be no damage to the machine and very thin sections can be made.

USE OF PORTABLE LADDERS

Ladders can be used safely if they are given the respect they deserve.

Before using any ladder, make sure that it is in good condition and is the right ladder for the job to be done.

- When setting up a ladder, secure the base and "walk" the ladder, up into place.
- The ladder should be set at the proper angle of one (1) horizontal to every four (4) vertical.
- Before using a ladder, make sure it is secured against movement.
- When in position, the ladder should protrude one (1) meter above the intended landing point.
- Workers shall not work from the top two rungs of a ladder.
- Don't overreach while on a ladder. It is easier and safer to climb down and move the ladder over a few feet to a new position.
- Always face the ladder when using it. Grip it firmly and use the three-point contact method when moving up or down.
- The minimum overlap on an extension ladder should be one (1) meter unless the manufacturer specifies the overlap.
- Keep both metal and wood ladders, away from electrical sources.
- Due to health and safety concerns, a step ladder is not loaned to any building occupant who has not received training approved by U of L Occupational Health & Safety department.

USE OF POWER WASHER

- Park vehicle away from bay doors and building to allow room to wash and for drainage.
- Turn on water.
- Plug in washer.
- Take washer outside.
- Pull out entire hose before using washer. This will ensure you have enough hose to wash the vehicle. Once system is pressured it is difficult to remove more hose.
- Locate soap bucket and insert the feeder tube into it. The mixture for soap if it is low is 1 litre of soap to 20 gallons of water. (Approximate ratio – use eye to measure).
- Turn temperature level on the washer to 250 degrees.
- Make sure that the extended yellow nozzle is on the tip of the washer. Any other tip may cause damage.
- Turn the red knob to “on” to start the burner to heat the water.
- Turn the soap to the preset setting.
- Wash the vehicle.
- Turn soap off to rinse vehicle.
- Turn burner off and let the unit run on pump for at least the last minute during rinsing. This will allow the burner to cool down and will use up any heated water.
- Do not leave washer running without use for extended periods of time.
- When finished put unit away, turn off water, put soap away, and rewind hose.

PROPER LIFTING TECHNIQUES

The three major causes of back injury are over-extension, poor lifting techniques and trying to lift too heavy an object. The following tips should help reduce the chances of injuring your back.

- Keep your back straight.
- Get as close to the object as possible to avoid over-extension.
- Place one foot slightly ahead of the other in the direction you intend to move the object.
- Bend your knees and get a good grip on the object.
- Lift with your legs.
- Move forward in the direction of your most forward foot to avoid twisting your back
- Reverse the procedure when placing the object down.
- If at all possible, keep the objects off of the floor, to reduce the strain of lifting in awkward positions.

To reduce the strain on your back while standing.

- Whenever possible, stand with one foot elevated.
- Change positions often.
- Interrupt long periods of standing by sitting whenever possible.

REPORTING RATTLESNAKES

Relocation of problem rattlesnakes

During summer months the number of rattlesnake sightings on campus increases significantly. The U of L reports these sightings to Reg Ernst who conducts studies and control activities for the City of Lethbridge. Reg indicates the main campus is not a safe site for either the snakes or campus occupants to interact. The City of Lethbridge wants to relocate any problem rattlesnakes. A problem rattlesnake is defined as any rattlesnake found on roads, walkways, around buildings, or areas frequently used by people.

Relocating rattlesnakes is a delicate issue, and considering the potential danger in working with poisonous snakes, it is necessary to have a professional do the removal. Proper relocation involves moving the snake to an area with a suitable wintering den.

What should you do if you see a rattlesnake?

- Observe but do not attempt to capture the snake.
- Contact the phone numbers below in the order listed until contact is made.

RATTLESNAKE REPORTING CALL LIST	
Contact	***Phone/Cell Number***
Wonnita Andrus, U of L	795-3889
Reg Ernst, City of Lethbridge	381-0528 or 360-0371 (cell.)
Ian Wells, Grounds Superintendent	317-0733
Security	2603 or 2345
Alberta Fish & Wildlife	381-5266 or 1-800-642-3800 (after hours)
Helen Schuler Coulee Centre	320-3064

- If you are unable to contact an outside agency for removal, the snake still reflects as a safety hazard and must be removed by U of L personnel. Contact Ian Wells (317-0733) or Security (2603 or 2345) to capture the rattlesnake.
    - The container holding the snake must be kept in the shade after capture as rattlesnakes are very heat sensitive.

USE OF STEP LADDERS

As with all ladders, make sure that the Step Ladder is in good condition, and is the right ladder for the job to be done.

- Step Ladders are to be used only on clean and even surfaces.
- No work is to be done from the top two steps of a Step Ladder, counting the top platform as a rung.
- No work is to be done from the back side of the Step Ladder.
- When in the open position ready for use, the incline of the front step section shall be one (1) horizontal to six (6) vertical.
- The Step Ladder is only to be used in the fully opened position with the spreader bars locked.
- Tops of Step Ladders are not to be used as a support for scaffolds.
- Don't overreach while on the ladder. Climb down and move the ladder over to a new position.
- Only CSA Standard ladders will be used.
- Due to health and safety concerns, a step ladder is not loaned to any building occupant who has not received training approved by U of L Occupational Health & Safety department.

CIRCULAR TABLE SAW

- The guard must be kept down over the saw while machine is being operated.
- The saw must not be raised above the table more than absolutely necessary to make the cut.
- A push stick must be used when ripping narrow pieces of lumber.
- The clearance block must be fastened to fence when cutting off short pieces of stock. Never adjust fence until saw is at a dead stop.
- Fingers must be kept clear of track of saw, and hands never allowed to cross saw line in advance of the end of the board while machine is in operation.
- Never attempt to clear away scraps close to the saw with their fingers. If necessary to move them, they should be pushed away with a stick.
- The dado head must be taken off the saw arbor after use.
- When helping to "tail-off" the saw, never pull on a board being ripped. Hold up board, and allow operator to push stock through saw.
- Cylindrical stock must not be cut on circular saw.
- Never lower pieces of stock down over the saw.
- Do not rip stock without using the ripping fence, or crosscut stock without using the sliding crosscutting fence.
- See that no fence or setup will be in line of saw before starting work or turning on power.
- Be sure that saw on tilting arbor saw will clear on both sides when sawing angles, before power is turned on.
- The edge of a board, which is run on the ripping fence, should be straight. Avoid ripping through loose knots or checks where large slivers must be cut loose and thrown by the saw.
- Stand a little to one side of the saw line so that any kickback will go past. Avoid letting wood hang between the fence and the saw.
- Warped or twisted lumber that does not lie flat on the table may cause a kickback.

USE OF COMPRESSED AIR

Air powered tools in construction range from stapling guns to jack hammers. If not treated with respect, these tools can become a powerful enemy rather than a servant.

- Compressed air must not be used to blow debris or to clear dirt from any worker's clothes.
- Compressed air must not be used to blow dust, chemicals, metal filings, etc. from work surfaces. Surfaces should be swept clean.
- Ensure that the air pressure has been turned off and the line pressure relieved before disconnecting the hose or changing tools.
- All hose connectors must be of the quick disconnect pressure release type with a "safety chain / cable".
- Wear personal protective equipment such as eye protection and face shields, and ensure other workers in the area are made aware of or have restricted access to the hazard area.
- Hoses must be checked on a regular basis for cuts, bulges, or other damage. Ensure that defective hoses are repaired or replaced.
- A proper pressure regulator and relief device must be in the system to ensure that the correct desired pressures are maintained.
- The correct air supply hoses must be used for the tool / equipment being used.
- The equipment must be properly maintained according to the manufacturer’s requirements.
- Follow manufacturer's general instructions and comply with legislated safety requirements.

USE OF ELECTRICAL EXTENSION CORDS

Extension cords are one of the most abused and neglected items on the job site. They are run over, stretched, pulled, twisted and exposed to all the elements. They have been the cause of more accidents than the tools for which they are used.

The following recommendations should be observed whenever extension cords are used:

- Prior to use, inspect cords to ensure that:
    - The insulation is intact around the plugs at both ends of the cord.
    - The pins on the plugs are not broken or burned.
    - The outer jacket of the cable is intact along its entire length.
- Extension cords should be replaced or repaired when a defect is found.
- Do not assume that everyone is able to repair or replace plug caps. All personnel should be educated to recognize the importance of properly wired circuits.
- Use only cords that are rated for outdoor use on construction jobs. These industrial cables (types S, SO, SOW) are oil, water, and abrasion resistant.
- Never unplug any cord by pulling the cable.
- Never lay out a cord in any area where it could be damaged by vehicular or pedestrian traffic or where materials could fall or be piled on it.

USE OF EXPLOSIVE / POWDER ACTUATED FASTENING TOOLS

There are a number of tools utilizing an explosive charge in use throughout the construction industry to drive fastenings.

The manufacturers of these devices provide detailed instructions regarding their use and maintenance. These instructions, along with the legislation specifically set out for their use, shall be closely adhered to at all times.

The following general recommendations apply to all explosive/powder actuated tools.

- Only properly trained and qualified operators are to use this type of tool. The user shall possess proof of this training issued by the manufacturer, authorized dealer/distributor, or other competent source.
- The tool must be CSA standard approved for "Explosive Actuated Fastening Tools".
- The tool should be loaded just prior to use with the correct load for the job anticipated. Tools should never be loaded and left to sit or be moved to an alternate work site after being loaded.
- The tool should never be pointed at anyone, whether loaded or unloaded. Hands should be kept clear of the muzzle end at all times.
- Explosive/powder actuated tools should always be stored in their proper lockable boxes.
- Explosive/powder actuated tools must never be used in an explosive atmosphere.
- When used, the tool must be held firmly and at right angles to the surface being driven into.
- Eye protection must be worn by the operator. Where there is a danger of spelling, full-face protection must be worn. Hearing protection is also to be worn in confined areas.
- To prevent free-flying studs, ensure that the material being driven into will not allow the stud to completely pass through it (le, glass block, hollow tile etc.).
- Manufacturers' recommendations should be consulted and followed whenever there is a doubt about the material being driven into, maintenance procedures or load strength to be used.
- Always be aware of the other workers. Where a hazard to other workers is created by this operation, signs and barricades identifying the hazard area are mandatory.

USE OF HAND HELD POWER CIRCULAR SAW

This type of power hand tool is one of the most commonly used in construction. Because of this common use there are numerous accidents due to thoughtless acts.

The following are the minimum accepted practices to be used with this saw.

- Approved safety equipment such as safety glasses or a face shield is to be worn.
- Where harmful vapours or dusts are created, approved breathing protection is to be used.
- The proper sharp blade designed for the work to be done must be selected and used.
- The power supply must be disconnected before making any adjustments to the saw or changing the blade.
- Before the saw is set down be sure the retracting guard has fully returned to its down position.
- Both hands must be used to hold the saw while ripping.
- Maintenance is to be done according to the manufacturer's specifications.
- Ensure all cords are clear of the cutting area before starting to cut.
- Before cutting, check the stock for foreign objects or any other obstruction, which could cause the saw to "kick back".
- When ripping, make sure the stock is held securely in place. Use a wedge to keep the stock from closing and causing the saw to bind.

USE OF PERSONAL HEADPHONES

- The use of personal headphones is prohibited during all working hours.
- The use of personal headphones is prohibited while driving a University of Lethbridge vehicle, personal vehicle or mobile equipment during working hours.

USE OF PORTABLE GRINDERS

Abrasive wheels can cause severe injury. Proper storage of new wheels, proper use of wheels and proper maintenance of wheels must be observed.

- Familiarize yourself with the grinder operation before commencing work.
- Ensure proper guards are in place and that, safety glasses, face shields, gloves and safety boots are worn when using portable grinders.
- Never exceed the maximum wheel speed (every wheel is marked). Check the speed marked on the wheel and compare it to the speed on the grinder.
- When mounting the wheels, check them for cracks and defects, ensure that the mounting flanges are clean and the mounting blotters are used. Do not over tighten the mounting nut.
- Before grinding, run newly mounted wheels at operating speed to check for vibrations.
- Do not use grinders near flammable materials.
- Never use the grinder for jobs which it is not designed for, such as cutting.

USE OF POWER TOOLS

All power tools are designed for unique applications, they have their limitations and can create potential hazards when improperly used. Here are some points to remember when using power tools:

- The operation and repair of any power tool must be restricted to experienced, trained, authorized personnel.
- Select the proper tool for the job. The size of the power tool to be used is based on both the limitations of the tools themselves and the amount of work to be done.
- Always be alert to potential hazards in the area such as debris, damp floors or combustible materials. In wet areas, use insulated platforms, rubber mats, rubber gloves and rubber boots for an additional factor of safety.
- Make sure all power tools are of the double-insulated type or they are properly grounded. If the tool is equipped with a three-prong plug, use it as it is meant to be used. Electrical circuits intended for power tools should be provided with ground fault circuit interceptors (GFCI's)
- Appropriate protective clothing should be worn at all times. Avoid wearing loose clothing or jewelry that can catch in moving-parts. Wear safety glasses, hearing protection, and / or a dust mask if the operation requires.
- Be sure not to handle a power tool in a manner that can injure you if it slips. Think about your movements and position your body accordingly. Keep proper footing and balance at all times. Avoid over reaching.
- Never rest a power tool against the body when loading or making adjustments. Use brushes, vacuuming equipment or special tools to remove chips or sawdust. Secure work using a clamp or vice when practical. Never apply a power tool to a moving object.
- Keep guards in place and in working order. Don't remove or wedge the guard out of the way. If the guard has to be retracted, use the handle on the guard.
- Beware of accidental start-up. Make sure the switch is OFF before plugging in the cord and before investigating a power loss. Do not carry a plugged-in tool with your finger on the switch.
- Have all power tools serviced by a professional if it shows the slightest defect or is not running properly.

USE OF POWER TOOLS (cont.)

- Clean your tools after you're finished with your work. Make sure keen-edged blades, drill bits, routers, etc. are sharp, regularly maintained and stored in a dry secure place where they won't be tampered with.
- Don't set the tool down or leave it unattended until all moving parts stop.

USE OF PROPANE

Since propane is heavier than air and invisible, it is a special concern when it is used on the job-site.

All installations and use of this product on the job-site must comply with the Government Legislation set out for its safe use.

Suppliers delivering the product or setting up the equipment at the site must be part of the safe work practice.

- Nylon slings must be used in a "choker" fashion when loading, off-loading or lifting propane tanks.
- "Lifting lugs" provided on tanks are not to be used. Slings are to be wrapped around the shell of the tank.
- Tank valves and regulators are to be removed from the tank prior to any movement of the tank.
- Crane hooks shall be equipped with a "safety latch".
- All trucks, cranes or equipment used to handle propane tanks must be equipped with a fire extinguisher appropriate for the size and type of tank being handled.
- Except in an emergency, any movement or repositioning of tanks, shall be performed by a competent worker.
- Tanks are not to be heated to increase flow.
- When in use, propane bottles are to be securely held in an upright position.
- Tanks are not to be hooked up and used without proper regulators.

USE OF SHAPER / ROUTER

The use of a Shaper and a Router differ in that one is stationary (Shaper) and one is portable (Router). With the use of the Shaper, the machine remains stationary as you guide the material through it. With a router, the item being worked on remains stationary as you guide the router across it to form the desired pattern. The general operation and safety precautions necessary are quite similar.

- Visually inspect equipment / tool to ensure all guards are in place, cords are in satisfactory condition, switches are working properly, and exhaust is hooked up to Shaper. When using a Router a dust mask must be worn.
- Hearing protection and safety glasses must be worn.
- Ensure exhaust system is turned on prior to starting Shaper. If no exhaust system is available a dust mask should be worn when operating Shaper.
- Check rotating direction of bits to ensure they are rotating in desired direction of feed. For the Shaper, the direction is reversed with a lever on the machine. For a Router, if the direction is incorrect and needs to be reversed, the bits are likely upside down, and need to be taken off and flipped over.
- Ensure machine is turned off prior to changing bits.
- Remove fence to get at Shaper bit.
- Using designated wrench, loosen nut off of threaded spindle.
- Replace bit. If bit is loose on spindle, use proper bushing to secure in place.
- Depending on the type of Shaper bit used to replace existing one, the whole spindle piece may need to be changed out as well.
- Install or remove table collars on the Shaper around the bit as necessary to ensure maximum coverage of hole in table.
- Replace nut and tighten to hold bit in place.
- Replace fence on Shaper. Opening in fence may need to be adjusted to accommodate new bit.
- Adjust depth of fence on Shaper to expose bit to desired depth of profile. To change depth of cut when using the Router the motor is raised or lowered into base of Router.
- Using hand crank on side of shaper, adjust height of bit to obtain desired profile of cut.

USE OF SHAPER / ROUTER (cont.)

- Test on scrap piece of material to check profile of cut. Adjust as necessary.
- Feed piece through the Shaper ensuring hands / fingers are a couple of inches back from the rotating bit.
- No loose clothing is to be worn around rotating equipment to prevent personal injury from

being pulled into bits.

- If large amounts of stock are being fed through the Shaper, the power feed may be used.
- Turn off machine and exhaust when not in use. Never leave a machine or tool in operation unattended.
- For further operation or safety information refer to operator's manual for Shaper found in envelope on the side of the Shaper. The Instruction manual for the Router is located in the filing cabinet in Carpenter Shop.

PROPER USE OF ROTATING EMERGENCY FLASHING WARNING LIGHTS ON VEHICLES

Why do we have these lights?

- Service vehicles that park on roadways or along curbs on campus, in order to do their work, often create a traffic hazard. Flashing warning lights have been installed on all service vehicles to help increase their visibility to oncoming vehicles.

When are flashing lights used?

Flashing lights must be used when:

- parking along any curbs on campus
- stopping/parking in the middle of roadways or parking lot lanes
- leading a slow moving vehicle when hauling trailers or materials

Flashing lights are <u>not</u> used when:

- driving off campus - It is illegal for U of L to use these lights off campus.
- parking in parking spots or when off roadways

UNIVERSITY OF LETHBRIDGE
PHYSICAL PLANT AND OPERATIONS

HEALTH & SAFETY PROGRAM

PERSONAL PROTECTIVE EQUIPMENT

“INFO SHEET” FOR EYE & FACE PROTECTION

GENERAL INFORMATION

This PPE is designed to protect the worker from such hazards as:

- flying objects and particles,
- molten metals,
- splashing liquids, and
- ultraviolet, infrared and visible radiation (welding).

This PPE has two types. The first type, "basic eye protection", includes:

- eyecup goggles
- monoframe goggles and spectacles with or without side shields

The second type, "face protection," includes:

- metal mesh face shields for radiant heat or hot and humid conditions
- chemical and impact resistant (plastic) face shields
- welders shields or helmets with specified cover
- filter plates and lens

Hardened glass prescription lens and sport glasses are not an acceptable substitute for proper, required Industrial safety eye protection.

Comfort and fit are very important in the selection of safety eyewear. Lens coatings, venting or fittings may be needed to prevent fogging or to fit with regular prescription eyeglasses.

Contact lens should NOT be worn at the work-site. Contact lens may trap or absorb particles or gases causing eye irritation or blindness. Hard contact lens may break into the eye when hit.

Basic eye protection should be worn with face shields. Face shields alone often aren't enough to fully protect the eyes from work hazards. When eye and face protection is required, advice from the OH&S office, Material Safety Data Sheet (MSDS) or your supplier, will help in your selection.

For more information, look at:
Alberta's O. H. & S. Statute and Regulations, and
CSA Standard "Industrial Eye and Face Protectors" 294.3 - M1982.

Do

- ensure your eye protection fits properly (close to the face)
- clean safety glasses daily, more often if needed
- store safety glasses in a safe, clean, dry place when not in use
- replace pitted, scratched, bent and poorly fitted PPE (damaged face/eye protection interferes with vision and will not provide the protection it was designed to deliver).

Don't

- modify eye/face protection
- use eye / face protection which does not have a CSA certification (CSA stamp for safety glasses is usually on the frame inside the temple near the hinges of the glasses)

Eye Protection For Welders

Welders and welders' helpers should also wear the prescribed equipment. Anyone else working in the area should also wear eye protection where there is a chance they could be exposed to a flash.

"INFO SHEET" FOR FALL PROTECTION

General Information

As outlined in the AHRE Occupational Health and Safety Code; Part 9 Fall Protection;

> **139** **(1)** An employer must ensure that workers use a fall protection system at a temporary or permanent work area if
>
> **(a)** a worker may fall 3 meters or more, or
>
> **(b)** there is an unusual possibility of injury if a worker falls less than 3 meters.

Employers must develop a fall protection plan where the above is true, to include the following;

> **143** **(2)** A fall protection plan must specify
>
> (a) the fall hazards at the work site,
>
> (b) the fall protection system to be used a the work site,
>
> (c) the procedures used to assemble, maintain, inspect, use and disassemble the fall protection system, and
>
> (d) the rescue procedures to be used if a worker falls, is suspended by a personal fall arrest system or safety net and needs to be rescued.

Full body harness systems are to be used to provide workers working at heights above ground level with freedom of movement and protection from falls. These devices will arrest a fall and absorb some of the shock of the fall. The systems are usually worn around the body and attached to a lanyard, fall arresting device or rope grab. Better quality systems usually have some form of shock absorber in the system.

A lifeline should never be used as a service line. The only time a lifeline becomes a load bearing line is in the event of a fall. At all other times it should be just slack enough to permit free movement on the service lines.

It is very important to get quality advice in the selection, purchase and maintenance of your fall arresting equipment.

Please refer to the following CSA and ANSI Standards when selecting equipment;

145 **(1)** Harnesses: CAN/CSA-Z259.10-M90 (R1998), *Full Body Harnesses*

(3) Lanyards: CAN/CSA-Z259.1-95 (R1999), *Safety Belts and Lanyards*

(4) Shock Absorbers: CAN/CSA-Z259.11-M92 (R1998), *Shock Absorbers for Personal Fall-Arrest Systems*

(5) Connecting Components: CAN/CSA-Z259.12-01, *Connecting Components for Personal Fall Arrest Systems (PFAS)*

Do

- obtain expert advice before purchasing a fall arresting device
- properly train and practice with the system you decide to use
- use webbing type harnesses instead of leather harnesses
- use only the manufacturer's components for replacement parts
- inspect carefully before each use (inspection to be performed by a trained worker)
- have the harness fitted snugly to the worker using the system
- ensure that the anchor points are secure and able to support the load In the event of a fall
- follow the manufacturer's instructions on care and use
- ensure all lines used with the systems have thimbles
- use only the proper safety rated fastenings with the system
- use a full body harness with shock absorber whenever possible

Don't

- modify, change or put additional holes in the harness or hardware
- jerry-rig the system
- use the system for any other than its intended use
- use the lifeline for a service line

“INFO SHEET” FOR FOOT PROTECTION

General Information

Safety footwear is designed to protect against foot hazards in the workplace. Safety footwear protects against compression, puncture injuries, and impact.

Safety footwear is divided into three grades, which are indicated by colored tags and symbols.

The tag color tells the amount of resistance the toe will supply to different weights dropped from different heights.

The symbol indicates the strength of the sole. For example, a triangle means puncture-resistant sole able to withstand 135 kg (300 ft. lips.) of pressure without being punctured by a 5 cm (2 inch) nail. For more information, look at Alberta's O. H. & S. Statute and Regulations or CSA Standard "Protective Footwear" 2195-M1981.

In construction, it is recommended that only the green triangle grade of footwear, which also gives ankle support, be used.

You choice of protective footwear should always over protect, not under protect.

Do

- choose footwear according to job hazard and CSA Standards.
- lace up boot and tie laces securely; boots don't protect if they are a tripping hazard or fall off.
- use a protective boot dressing to help the boot last longer and provide greater water resistance (wet boots conduct current).
- choose a high cut boot to provide ankle support (less injuries).

Don't

- wear defective safety footwear (i.e., exposed steel toe caps).
- under protect your feet or modify safety footwear.

“INFO SHEET” FOR HEAD PROTECTION

General Information

Safety headwear is designed to protect the head from impact from falling objects, bumps, splashes from chemicals or harmful substances, and contact with energized objects and equipment.

In construction, the recommended type of protective headwear is the Class B hard hat which has the required "dielectric strength". There are many designs but they all must meet the CSA requirements for Class B Industrial head protection.

Most head protection is made up of two parts:
the shell (light and rigid to deflect blows)
the suspension (to absorb and distribute the energy of the blow)

Both parts of the headwear must be compatible and maintained according to manufacturer's instructions. If attachments are used with headwear, they must be designed specifically for use with the specific headwear used. Bump caps are not considered a helmet. I n Alberta they can only be used when the only hazard is where a worker might strike his/her head against a stationary object.

Inspection and Maintenance

Proper care is required for headgear to perform efficiently. The service life is affected by many factors including temperature, chemicals, sunlight and ultraviolet radiation (welding). The usual maintenance for head gear is simply washing with a mild detergent and rinsing thoroughly.

Do:

- replace headgear that is pitted, holed, cracked or brittle
- replace headgear that has been subjected to a blow even though damage cannot be seen
- remove from service any headgear if its serviceability is in doubt
- replace headgear and components according to manufacturer's instructions
- consult OH&S or your supplier for information on headgear.

Don't:

- drill, remove peaks, alter the shell or suspension in any way
- use solvents or paints on the shells (makes shells "break down")
- put chin straps over the brims of Class B headgear
- use any liner that contains metal or conductive material
- carry anything in the hard hat while wearing the hard hat

“INFO SHEET” FOR HEARING PROTECTION

General Information

Hearing protection is designed to reduce the level of sound energy reaching the inner ear.

The "rule of thumb" for hearing protection is: use hearing protection when you can't carry on a conversation at a normal volume of voice when you are 3 feet apart.

Remember this is only a rule of thumb. Any sound over 80 dba requires hearing protection. Hearing loss can be very gradual, usually happening over a number of years.

The most common types of hearing protection in the construction industry are earplugs and earmuffs. If you choose to use the other types of hearing protection, ask your safety supplier or OH&S office for further information.

It is important to have different styles of hearing protection available. Different styles allow a better chance of a good fit. Each person's head, ear shape and size is different. One style may not fit every person on your crew. If hearing PPE does not fit properly or is painful to use, the person will likely not use it. If the hearing protection is not properly fitted, it will not supply the level of protection it was designed to deliver.

Most earplugs, if properly fitted, generally reduce noise to the point where it is comfortable (takes the sharp edge off the noise).

If your hearing protection does not take the sharp edge off the noise, or if workers have ringing, pain, headaches or discomfort in the ears, your operation requires the advice of an expert.

Workers should have their hearing tested at least every year, twice a year if they work in a high noise area.

OH&S NOISE REGULATION – EXPOSURE LIMITS

TABLE 1
OCCUPATIONAL NOISE LEVEL EXPOSURE LIMITS
(Figures to be prorated if not specified)

Exposure Level (dBA)	Duration
82	16 hours
83	12 hours
84	10 hours
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 min
100	15 min
103	8 min
106	4 min
109	2 min
112	1 min
115 and greater	0

Where applicable, values have been rounded to nearest whole digit

TABLE 2
SELECTION OF HEARING PROTECTORS

Maximum Noise Level (dBA)	CSA Class of Hearing Protector
85-89	C
90-95	B
96-105	A
Greater than 105	A plug + A or B muff

TABLE3
PERMISSIBLE BACKGROUND NOISE CONDITIONS
FOR AUDIOMETREC TESTING

Octave Band Centre Frequency	Maximum Levels (dBA)
500	30
1000	30
2000	37
4000	47
8000	52

For more information refer to Occupational Health & Safety Noise Regulation

"INFO SHEET" FOR RESPIRATORY PROTECTION

General Information

Respiratory protection falls into two major categories. The first category is Air Purifying Respirators (APRs) which are particle (dust) chemical cartridges but NO visor plate. The second category is Atmosphere Supply Respirators, including self-contained breathing apparatus (SCBA), air line systems and protective suits that completely enclose the worker and incorporate a life support system.

Only APRs will be dealt with here. The second category of respirators requires much more specific information and training. If you need to use Atmosphere Supplying Respirators, you should get expert advice.

APRs

There are two basic types of APRs:

- disposable fibre type with or without charcoal or chemical filter "buttons" and
- the reusable rubber face mask type with disposable or rechargeable cartridges.

The choice depends on your job, labor, cost, and your maintenance facility.

It's Important to remember that APRs are limited to areas where there is enough oxygen to support life. APRs don't supply or make oxygen.

The service life is affected by the type of APR, the wearer breathing demand, and the concentration of airborne contaminants. When an APR is required, consult the Material Safety Data Sheet (MSDS), OH&S or supplier for the exact specifications for the APR.

Facial hair can prevent a good seal and fit of an APR: One to three days growth is the worst. Follow the manufacturer's instructions to the letter regarding the mask, filters, cartridges and other components. Workers who must use respiratory protection should be clean shaven.

An APR is only as good as its seal and its ability to filter out the contaminants it was designed to filter.

Combination Respirators

This type of APR combines separate chemical and mechanical filters. This allows for the change of the different filters when one of them becomes plugged or exhausted before the other filter (usually the dust filter plugs up before the chemical filter). This type of respirator is suitable for most spray painting and welding. For more information check the:

- Material Safety Data Sheet (MSDS)
- OH&S Regulations
- the local OH&S office
- the safety equipment supplier

For more information, look at:

Alberta OH&S Statutes and Regulations
CSA Standards "Compressed Breathing AID" Z180.1 - M1978
"Selection, Care and Use of Respirators" 294.4 - M1982
Chemical Hazards Regulation (Alberta Reg. 8/82)

Do

- train workers very carefully in the APR's use, care and limitations
- ensure that respirators are properly cleaned and disinfected after each shift, according to the manufacturer's instructions
- dispose of exhausted cartridges and masks in sealed bags or containers
- keep new, unused filters separate from old, used filters
- monitor APR use; they are useless just hung around the neck
- replace filters when breathing becomes difficult.

Don't

- use for protection against materials which are toxic in small amounts
- use with materials that are highly irritating to the eyes
- use with gases that can't be detected by odor or throat or nose irritation
- use with gases not effectively halted by chemical cartridges regardless of concentration (read the cartridge label)
- use respirators or masks if the serviceability is in doubt ,
- use APRs where oxygen content in the air is less than 18 % or 18 kilopascals (partial pressure or greater)

“ INFO SHEET” FOR SUN PROTECTION

For the purposes of this manual and work performed on The University of Lethbridge campus, the guidelines for Sun Protection are defined by but not limited to the following:

- Shirts with sleeves of not less than 4” when measured from the underseam to the sleeve hem.
- Full length pants that cover the top of work boots.
- Eye protection with tinted lenses to reduce / block Ultraviolet (UV) rays.
- A hat with a brim that will provide adequate protection from the sun for neck, ear, and face areas. (*Recommended*)
- Sunscreen with a recognized Sun Protection Factor (SPF) of 15 or higher. (Note: Sunscreen should be applied at least 20 minutes before going out into the sun as recommended by Health Canada). (*Recommended*)

For more information on the effects of exposure to sunlight refer to the Heath Canada website located at www.hc-sc.gc.ca.